SPECTRUM®

Software Release Notice for 5.0rev1
CS3 and MMS3

The CS3 portion of the CD includes SPECTRUM core updates. The MMS3 portion includes new and updated versions of management modules. Once the CS3 software has been installed, you MUST install the MMS3 versions of any management modules previously installed in your database.

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Chapter 1

Introduction

This chapter provides an overview of this document and the CS3 and MMS3 software.

Purpose of This Document

This Software Release Notice (SRN) accompanies the CD containing the Core Supplement (CS3) and Management Module Supplement (MMS3) software for SPECTRUM Enterprise Manager 5.0rev1. The SRN is also available on Cabletron's Web site at: **http://www.cabletron.com/support/**.

This SRN performs the following functions:

- Describes the purpose of this software release.

  See *Purpose of CS3 and MMS3* on Page 1-2.

- Describes new features and support.

  See *New Features and Support* on Page 1-3.

- Provides installation instructions for CS3 and MMS3.

  See *Installation* on Page 2-1.

- Describes what previously released software is being superseded.

  See Chapter 5.

- Describes anomalies (with solutions or workarounds when available) that have not been previously documented.

  See *CS3 Known Anomalies* on Page 3-7 and *MMS3 Known Anomalies* on Page 4-14.

- Describes new problem resolutions incorporated in CS3 and MMS3.

  See *Problems Resolved in CS3* on Page 3-2 and *Problems Resolved in MMS3* on Page 4-5.

Purpose of CS3 and MMS3

The CS3 and MMS3 software portions of the CD perform the following functions for SPECTRUM 5.0rev1.

- The CS3 software provides an interim solution to problems and anomalies associated with SPECTRUM 5.0rev1. It consolidates previous off-cycle releases (Patches) and provides solutions to some problems not previously addressed. As a Core Supplement release, CS3 provides solutions to issues affecting the SPECTRUM Core, the Core Management Modules, and such SPECTRUM applications as ArchMgr and Reports. CS3 does not provide solutions to device management issues associated with the management modules. Such issues are addressed in the MMS3 software.

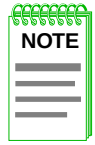
  See Chapter 3, *CS3 Software Characteristics*, for details on the CS3 software.

  See Chapter 6, *Files Shipped With CS3*, for a list of the files shipped with CS3.

- The MMS3 software provides updated SPECTRUM 5.0rev1 management modules. This includes the management modules in MMS1 and MMS2 plus any additional management modules updated or produced since the release of MMS2. The MMS3 software is installed after installing CS3. You *must* install those management modules that have been previously installed in your SPECTRUM database and you *should* install any additional

management modules included in MMS3 that you have purchased.

See Chapter 4, *MMS3 Software Characteristics*, for details on the MMS3 software and listings of the management modules included in MMS3.

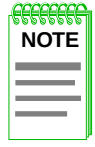


As a minimum, all of the management modules in your current SPECTRUM database must be re-installed from the MMS3 software in order for your SPECTRUM 5.0rev1 system to operate properly. Installation of MMS3 requires a Key provided with the CD. This Key ensures the extraction of the management modules you have purchased.

New Features and Support

SPECTRUM 5.0rev1 supports the Solaris 2.5.1, Solaris 2.6, and Solaris 2.7 Operating Systems with the appropriate Y2K patches.

SPECTRUM 5.0rev1 supports Windows_NT with Service Pack SP4 and all post Service Pack SP4 Y2K related fixes.



Access the Sun and Microsoft Web pages for the appropriate Y2K patch information. See Table 2-1 on Page 2-4 for a list of the Sun patches required for Solaris 2.7 operation.

Chapter 2

Installation

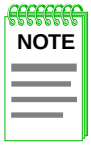
This chapter describes how to install the CS3and MMS3 software.

Overview

The installation procedures described in this chapter include four basic steps that must be performed in the following order:

1. Save the files indicated and then shut down all SPECTRUM processes. See *Pre-Installation Instructions* on Page 2-2.
2. Insert the CS3/MMS3 CD and run the CS3 installation program. See *Installing CS3* on Page 2-5.
3. When the CS3 installation completes, verify and modify files as necessary. See *CS3 Post-Installation Instructions* on Page 2-10.
4. Run the MMS3 installation program, if necessary. See *Installing MMS3* on Page 2-11.

Although these installation procedures may appear to be similar to those used to install the previously released CS2 and MMS2 software, we urge you to completely read ALL of the instructions in this chapter before proceeding.



CS3 must be installed in its entirety (prior to installing the MMS3 software) on all systems containing a SpectroSERVER or SpectroGRAPH. It is not necessary for CS2, MMS2, or any of the patches listed in Chapter 5, *Software Superseded by CS3/MMS3*, to have been installed on your SPECTRUM 5.0rev1 system prior to installing CS3.

Pre-Installation Instructions

Perform the steps described below before invoking the CS3 Install program.

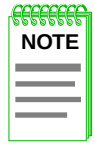
If the integrated version of VLAN Manager has been installed in your SPECTRUM system before CS3 is installed, it must be the latest version of VLAN Manager SecureFast 1.9.1 or else CS3 will fail to link the SpectroSERVER. The following error message will appear in the file install_log.xx.xx:

```
The missing symbol is:

   _OfNCsServiceConnUsend_receive_messageP61CsVnmM
   sgU1Pi
```

If you get this message, update VLAN Manager with the latest version (1.9.1) and then re-install CS3. Please see Technical Bulletin TB00771-9.

1. If you are going to run SPECTRUM 5.0rev1 on the Solaris 2.7 operating system, ensure that the appropriate SunOS patches (Table 2-1 on page 4) are installed on your system. Note that the Table lists the minimum revision level for the patches. These patches are not included in the CS3/MMS3 CD. The specific patches to be applied depend upon your system configuration. For example, 106144-08, the Elite3D AFB Graphics Patch, only applies if your system contains an Elite3D graphics card.



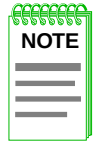
Attempting to apply an unnecessary patch will do no harm since the Sun patch installation software detects whether a particular patch is needed by verifying that the package it pertains to is currently installed on your system.

2. Save your current **CsStdMenu** file by changing directory to **<SPECTRUM Home>/app-defaults** and copying **CsStdMenu** to **CsStdMenu.ori** at the command line. (CS3 includes a new **CsStdMenu** file, to which you may wish to transfer any customized settings contained in your current **CsStdMenu** file.)

3. Save your **.vnmrc** file by changing directory to **<SPECTRUM Home>/SS** and copying **.vnmrc** to **.vnmrc.ori** at the command line. (CS3 includes a new **.vnmrc** file, to which you may wish to transfer any customized settings contained in your current **.vnmrc** file.)

4. Save your current **dtxscript** file by changing directory to **<SPECTRUM Home>/SG-Tools** and copying **dtxscript** to **dtxscript.ori** at the command line. (CS3 includes a new **dtxscript** file, to which you may wish to transfer any customized settings contained in your current **dtxscript** file.)

5. Make sure that all SPECTRUM processes have been shut down, including SpectroGRAPH, SpectroSERVER, ArchMgr, processd, and the Control Panel itself. (ArchMgr should be shut down using the Control Panel's Control menu.)

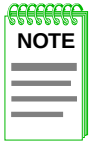


On Windows NT, extraction of the files **LocServer.exe** and **gzip.exe** will fail. This is a result of a problem with NT permissions. To ensure successful extraction of these files, proceed as follows:

1. Using Microsoft Explorer, navigate to the **LS** directory and rename the file **LocServer.exe** as **LocServer_orig.exe**.

2. Also using Microsoft Explorer, navigate to the **Install-Tools** directory and rename the **gzip.exe** file as **gzip_orig.exe.**

Users who are unfamiliar with the SPECTRUM installation process should refer to the ***SPECTRUM Installation Guide*** before proceeding with the CS3 and MMS3 installations.



You must install CS3 before installing MMS3.

Table 2-1. SunOS Patches for Solaris 2.7 (Minimum Revision Level)

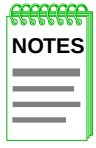
Patch-rev	Description
106144-08	SunOS 5.7: Elite3D AFB Graphics Patch
106145-07	SunOS 5.7: Creator 7 FFB Graphics Patch
106146-07	SunOS 5.7: M64 Graphics Patch
106147-04	SunOS 5.7: VIS/XIL Graphics Patch
106148-05	SunOS 5.7: XFB Graphics Patch
106541-05	SunOS 5.7: Kernel update Patch
106944-02	SunOS 5.7: /kernel/fs/fifofs and /kernel/fs/sparcv9/fifofs Patch
106980-05	SunOS 5.7: libthread Patch
107078-10	OpenWindows 3.6.1: Xsun Patch
107117-04	SunOS 5.7: libbsm Patch
107359-01	SunOS 5.7: Patch for SPARCompiler Binary Compatibility
107448-01	SunOS 5.7: /usr/lib/fs/cachefs/cachefsd Patch
107450-01	SunOS 5.7: /platform/SUNW,Ultra-Enterprise-10000/ lib/cvcd Patch
107451-01	SunOS 5.7: /usr/sbin/cron Patch
107458-02	SunOS 5.7: sd & ssd drivers Patch

Table 2-1. SunOS Patches for Solaris 2.7 (Minimum Revision Level)

Patch-rev	Description
107709-02	SunOS 5.7: libssasnmp/libssagent/snmpdx/mibiisa Patch
107716-02	SunOS 5.7: PGX32 Graphics Patch

Installing CS3

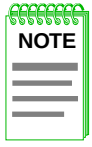
Install the CS3 software as described below.



1. Refer to the ***SPECTRUM Installation Guide*** for instructions on installing from a local or remote CD-ROM drive.

2. For Windows NT, use the SpectroSHELL by selecting it from the SPECTRUM Programs folder.

1. Change directory to **<full path of the vtape_CS3 directory>** to verify the path (that is, {CD-ROM Drive directory}/CS3/{platform}/vtape_CS3).
2. Change directory to the **<SPECTRUM Home>** directory.
3. Extract the contents of the release file labeled vtape.0 by performing one of the following steps:



There is a new version of "newtar" included with CS3 for extracting the release contents for Solaris systems. The change to "newtar" allows a **-u** flag, which honors **umask** even if run as the root user. This means that SPECTRUM can extract the files as you like according to your **umask** setting. However, this only affects the products/files that you are currently installing. Any files that are currently set to have write privileges to the group "other" will have to be changed manually. This **-u** flag is only applied for the extraction of CS3 on the Solaris platform.

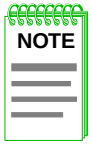
a. On Solaris:

```
<full path of the vtape_CS3 directory>/newtar xvudf
<full path of the vtape_CS3 directory>/vtape.0
```

b. On Windows NT:

```
<full path of the vtape_CS3 directory>/newtar xvpdf
<full path of the vtape directory>/vtape.0
```

4. Bring up the Install GUI by typing: **`./Install`**



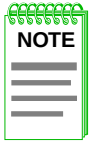
If the custom installation mode was used to install the 5.0rev1 release, then it is necessary to install CS3 in the custom installation mode. All user responses to custom script queries should match those given during the 5.0rev1 installation.

5. In the Installation Configuration window, enter the full path of the vtape_CS3 directory in the **Source Directory** field.

Do NOT deselect components via the **Select Individual Components** button in the Installation Configuration window. The Install program will automatically select and install those CS3 components that are applicable to your current SPECTRUM installation. Deselection of components may result in installation failure and/or incorrect product installation. You may, however, do SpectroSERVER-only or SpectroGRAPH-only installations.

6. Enter the user name of the person performing the installation in the **Target Ownership** field. This should be a login name other than **root** or **Administrator**.

7. Click **OK** to begin the CS3 software installation.



During the installation, getting any of the following errors while the SpectroSERVER is linking simply means that you need to install the MMS3 portion of the CD.

Solaris Link Errors for CS3

```
Please wait! Installation is now building SpectroSERVER
This may take several minutes...
Undefined                       first referenced
symbol                          in file
__0oKCsIHRtrSumctR6NCsMTypeHandleP6NCsAttrValListTCRC6L
CsRel HandleUl Cs8021QMI.o
__0fMCsIHIfConfigQinterface_changeRC6NCsModelHandleih.a(CsIH
NbldrIf.o)
__0fTCsIHDeviceIsolationQassert_conditionRC6NCsModelHandleUl
NCC ih.a(CsIHChsIsol.o)
__0fMCsIHRPAMaintQcheck_against_PARC6NCsModelHandleP6ICs
IPAddr ih.a(LbIHMPPALMn.o)
__0oKCsIHIfStatctR6NCsMTypeHandleUlNDCP6Iadmin_op
CsATMIfPtMI.o
ld: fatal: Symbol referencing errors. No output written to
SpectroSERVER /usr/ccs/bin/nm: SpectroSERVER: No such file
or directory

**^G Error during Link of SpectroSERVER
chown: SpectroSERVER: No such file or directory
chmod: WARNING: can't access SpectroSERVER

**^G Error during chmod u+s of SpectroSERVER
```

Windows_NT Link Errors for CS3

```
Cs8021QMI.o: error LNK2001: unresolved external symbol
public: __thiscall CsIHRtrSum::CsIHRtrSum(class CsMTypeHandle
&,class CsAttrValList *,class CsAttrValList *,class CsRelHandle
const &,unsigned long)"
(??0CsIHRtrSum@@QAE@AAVCsMTypeHandle@@PAVCsAttrValList
@@1ABV
CsRelHandle@@K@Z)
CsBdgMonMI.o: error LNK2001: unresolved external symbol
"public: __thiscall CsIHRtrSum::CsIHRtrSum(class CsMTypeHandle
&,class CsAttrValList *,class CsAttrValList *,class CsRelHandle
const &,unsigned long)"
(??0CsIHRtrSum@@QAE@AAVCsMTypeHandle@@PAVCsAttrValList
@@1ABV
CsRelHandle@@K@Z)
```

CsATMIfPtMI.o: error LNK2001: unresolved external symbol
"public: __thiscall CsIHIfStat::CsIHIfStat(class CsMTypeHandle
&,unsigned long,unsigned long,unsigned long,unsigned long,class
admin_op *)"
(??0CsIHIfStat@@QAE@AAVCsMTypeHandle@@KKKKPAVadmin_op
@@@Z)
CsCSIIfPtMI.o : error LNK2001: unresolved external symbol
"public: __thiscall CsIHIfStat::CsIHIfStat(class CsMTypeHandle
&,unsigned long,unsigned long,unsigned long,unsigned long,class
admin_op *)"
(??0CsIHIfStat@@QAE@AAVCsMTypeHandle@@KKKKPAVadmin_op
@@@Z)
CsRedPortMI.o : error LNK2001: unresolved external symbol
"public: __thiscall CsIHIfStat::CsIHIfStat(class CsMTypeHandle
&,unsigned long,unsigned long,unsigned long,unsigned long,class
admin_op *)"
(??0CsIHIfStat@@QAE@AAVCsMTypeHandle@@KKKKPAVadmin_op
@@@Z)
CsChassisMI.o: error LNK2001: unresolved external symbol
protected: virtual void __thiscall
CsIHDeviceIsolation::assert_condition(class CsModelHandle const &,
unsigned long,unsigned long,unsigned long)"
(?assert_condition@CsIHDeviceIsolation@@MAEXABVCsModelHandl
e@@KKK@Z)
CsForeDevMI.o: error LNK2001: unresolved external symbol
"protected: virtual void __thiscall
CsIHDeviceIsolation::assert_condition
(class CsModelHandle const &, unsigned long,unsigned long,
unsigned long)"
(?assert_condition@CsIHDeviceIsolation@@MAEXABVCsModelHandl
e@@KKK@Z)
CsForeSwMI.o: error LNK2001: unresolved external symbol
"protected: virtual void __thiscall
CsIHDeviceIsolation::assert_condition
(class CsModelHandle const &,unsigned long,unsigned long,
unsigned long)"
(?assert_condition@CsIHDeviceIsolation@@MAEXABVCsModelHandl
e@@KKK@Z)
LbCTMSwMI.o: error LNK2001: unresolved external symbol
"protected: virtual void __thiscall
CsIHDeviceIsolation::assert_condition
(class CsModelHandle const &,unsigned long,unsigned long,

unsigned long)"
(?assert_condition@CsIHDeviceIsolation@@MAEXABVCsModelHandl
e@@KKK@Z)
LbModuleMI.o: error LNK2001: unresolved external symbol
"protected: virtual enum CsIHIfConfig::CsInterface_e __thiscall
CsIHIfConfig::interface_change(class CsModelHandle const &)"
(?interface_change@CsIHIfConfig@@MAE?AW4CsInterface_e@1@AB
V
CsModelHandle@@@Z)
ih.a(CsIHNbldrIf.o): error LNK2001: unresolved external symbol
"protected: virtual enum CsIHIfConfig::CsInterface_e __thiscall
CsIHIfConfig::interface_change(class CsModelHandle const &)"
(?interface_change@CsIHIfConfig@@MAE?AW4CsInterface_e@1@AB
VCs
ModelHandle@@@Z)
ih.a(CsIHRdndPrt.o): error LNK2001: unresolved external symbol
"protected: virtual enum CsIHIfConfig::CsInterface_e __thiscall
CsIHIfConfig::interface_change(class CsModelHandle const &)"
(?interface_change@CsIHIfConfig@@MAE?AW4CsInterface_e@1@AB
V
CsModelHandle@@@Z)
ih.a(CsIHWfIf3.o): error LNK2001: unresolved external symbol
"protected: virtual enum CsIHIfConfig::CsInterface_e __thiscall
CsIHIfConfig::interface_change(class CsModelHandle const &)"
(?interface_change@CsIHIfConfig@@MAE?AW4CsInterface_e
@1@ABV
CsModelHandle@@@Z)
ih.a(LbIHMPPALMn.o): error LNK2001: unresolved external symbol
"protected: virtual void __thiscall CsIHRPAMaint::check_against_PA
(class CsModelHandle const &,class CsIPAddr *)"
(?check_against_PA@CsIHRPAMaint@@MAEXABVCsModelHandle@
@PAVCsIPAddr@@@Z)

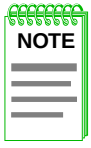
CS3 Post-Installation Instructions

Perform the following steps to verify and modify your files, as necessary.

1. Change directory to **<SPECTRUM Home>/app-defaults** and compare the file **CsStdMenu** with **CsStdMenu.ori**, which is the file you saved prior to this installation. Edit **CsStdMenu** to restore any customized settings you may have had in **CsStdMenu.ori**.

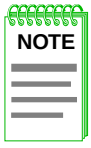
2. Change directory to **<SPECTRUM Home>/SG-Tools** and compare the file **dtxscript** with **dtxscript.ori**, which is the file you saved prior to this installation. Edit **dtxscript** to restore any customized settings you may have had in **dtxscript.ori**.

3. Change directory to **<SPECTRUM Home>/SS** and compare the file **.vnmrc** with **.vnmrc.ori**, which is the file you saved prior to this installation. Edit **.vnmrc** to restore any customized settings you may have had in **.vnmrc.ori**.



In the step below, it is recommended that you reboot your Windows NT system before starting SPECTRUM 5.0rev1.

4. If there is no need to install MMS3 (see Note below), bring up the Control Panel and start the SpectroSERVER and/or SpectroGRAPH; otherwise, proceed with the installation of MMS3.



You need not install any portion of MMS3 if (and only if) your SPECTRUM 5.0rev1 database does not contain a management module included in MMS3. This will NOT be the case for most installations. See *Management Modules Included in MMS3*, starting on Page 4-18.

Installing MMS3

This section describes how to start the MMS3 installation on the Solaris and Windows NT systems. These instructions are intended for users who are familiar with SPECTRUM installation.

Management module installation from the CS3/MMS3 CD proceeds in the same manner as the installation from a SPECTRUM distribution CD. If you are unfamiliar with this process, we recommend that you refer to the ***SPECTRUM Installation Guide*** to get complete installation information. This guide is available on Cabletron's Web site at the following location:

`http://www.cabletron.com/support/manuals/`

The MMS3 installation process ensures the installation of management modules currently installed in your SPECTRUM 5.0rev1 database plus any additional management modules that you have purchased. (See *Management Modules Included in MMS3*, starting on Page 4-18 for a list of the management modules included in MMS3.)

Starting the MMS3 Install on Solaris Systems

1. Use the **cd** command to navigate to the **<SPECTRUM Home>** directory.
2. Perform one of the following steps as root:
   a. If you are using a default mount point, enter:

      `/cdrom/cdrom0/mms3/install.cd`

   b. If you are not using a default mount point, enter:

      `/cdrom/mms3/install.cd`

Refer to the section titled **Running the Installation Software** in the ***SPECTRUM Installation Guide*** to get more information on the installation process.

Starting the MMS3 Install on Windows NT Systems

1. Open the Start menu and select the **Run** option. The Run dialog box displays.
2. In the **Open** field, enter the letter designation for your CD-ROM drive followed by the directory and application name as in the following example using the E drive:

   ```
   E:\mms3\setup.exe
   ```

3. Click **OK** in the Run dialog box to bring up the SPECTRUM Installation screen.
4. Click **Next** at the bottom of the Welcome window to bring up the Choose Destination Location window. (**Cancel** exits the installation GUI.)
5. If the **Destination Directory** field does not show the path to the directory where you want to install MMS3, use **Browse** to locate and select the proper <SPECTRUM Home> directory.
6. Click **Next** when the **Destination Directory** field is correct to bring up the Setup window, or click **Cancel** to exit.

   The Setup window lets you monitor the progress of the installation process. Of the three vertical gauges displayed, the right-most gauge shows the space available on the target system. When the available space falls to below 5%, the **Low** indicator turns RED.

   The Setup window exits automatically when the installation software finishes loading MMS3.

Refer to the section titled **Running the Installation Software** in the ***SPECTRUM Installation Guide*** to get more information on the installation process.

Chapter 3

CS3 Software Characteristics

This chapter describes the contents of the CS3 software. MMS3 is described in Chapter 4.

The following subsections are included in this chapter.

- *Previous Releases Included In CS3/MMS3* (see below) describes what previous SPECTRUM 5.0rev1 software is being superseded by virtue of its incorporation into CS3/MMS3.
- *Problems Resolved in CS3* *on Page 3-2* describes problem resolutions that have not been addressed in any previous off-cycle release.
- *CS3 Known Anomalies* *on Page 3-7* describes anomalies associated with this release of CS3.

Previous Releases Included In CS3/MMS3

Listed below (in chronological order) are the categories of problem resolutions that are provided by the CS3/MMS3 software.

- CS3/MMS3 supersedes all of the off-cycle releases originally superseded by the CS1/MMS1 software (i.e., Patches SPECTRUM_5.0rev1.P01 through SPECTRUM_5.0rev1.P16).

  See the Section titled *Patches Originally Superseded by CS1/MMS1* *on Page 5-2* for detailed descriptions of these patches.

- CS3/MMS3 supersedes all of the problem resolutions originally incorporated in the CS1/MMS1 software for the first time.

  See the Section titled *Other Resolutions Included in CS1/MMS1* *on Page 5-7* for descriptions of these items.

- CS3/MMS3 supersedes all of the off-cycle releases since CS1/MMS1 was released (i.e., Patches SPECTRUM_5.0rev1.P17 through SPECTRUM_5.0rev1.P51).

  See the Section titled *Patches Issued After the CS1/MMS1 Release* *on Page 5-10* for detailed descriptions of these patches.

- CS3 resolves problems reported in CS2 for the first time.

  See the Section titled *Problems Resolutions Included in CS2/MMS2* *on Page 5-32* for descriptions of these items.

- CS3 supersedes all of the off-cycle releases (Patches) since CS2/MMS2 was released (i.e., Patches SPECTRUM_5.0rev1.P52 through SPECTRUM_5.0rev1.P101).

  See the Section titled *Patches Issued Since the CS2/MMS2 Release* *on Page 5-34* for descriptions of these items.

A list of all the deliverable files included in CS3 is provided in the Section titled *Files Shipped With CS3* *on Page 6-1*.

Problems Resolved in CS3

CS3 provides resolutions for the following problems, which have not been addressed in any previous off-cycle release.

1. The problem was that the Ds3App1407 Application model type (available in the SmartSwitch 6000 series) had several GIB problems. The application name was not visible when the Application view was in the List mode. Also, in the Ds3App1407 Model Information view, the symbols ??? displayed for Model State, Condition, and Contact Status. In the DS3/E3 Configuration view, the symbol ??? displayed for Loopback Config, Line Type, Line Coding, and Transmit Clock Source.

The resolution was to add a default value for Model_Name so that the application name could be displayed properly. GIB enumerations were added to the Model Information view GIB file so that the correct values would be displayed for Model State, Condition, and Contact Status. And, finally, the read modes for the appropriate attributes were changed from Read-Only to Read-Instance and Read-Write to Read-Write-Instance so that the ??? symbols would no longer appear in the DS3/E3 Configuration view.

2. The problem was with SpectroWATCH threshold watches that were set to generate alarms. If you cleared the alarm for an exceeded threshold, the watch was not reinitialized. This caused a problem if the threshold was exceeded again. In order to receive a second alarm, you had to deactivate and reactivate the watch through the Alarm Manager.

The resolution was to add a check button to the Watch Editor, called **Reset watch upon user clearing of alarm**. This button and its functionality will be enabled if the options "Generate an alarm if violated" and "Alarm is user clearable" are both checked.

3. The problem was in displaying a TAB report using the Report Display GUI. The xterm would come up but all you would see in the report was the error `ld.so.1: more: fatal: relocation error: file more: symbol cur_term: referenced symbol not found Killed`. This was found to be a problem particularly on workstations running the Solaris 2.7 operating system, where the "more" command is no longer statistically linked with the curses library. The view cannot be properly viewed if you cannot use the "more" command.

The resolution was to add /usr/lib to the LD_LIBRARY_PATH in $SPECROOT/Install-Tools/setup.{k,c}sh. This allows the curses library to be loaded dynamically and the Report Display GUI to be viewed without errors.

4. The problem was that an "Unknown Landscape" error and "No User Model" error were competing for display when the Event view was started from the command line with **-showSplash** set to False by a user who had no user model in the VNM database. If this occurred, only the last error in the error stack would be displayed in the window. The "Unknown Landscape" error does not give a real description of the problem and only appeared because the service failed after the user model was queried. In this

case, the "No User Model" error should always be the one to be displayed.

The resolution was to add a special case to the code to handle the scenario when the Unknown Landscape error is received after a previous error when the service is unusable. Now, the error with the most useful information will always be displayed.

5. A problem occurred when the SpectroGRAPH was being displayed on a remote X server or a machine with a completely different operating system from the SpectroSERVER machine (e.g., HP-UX, Linux, etc.). SPECTRUM's Install-Tools/setup.{c,k}sh script was evaluating and modifying the fontpath settings of the remote X server. It split the fontpath into directories and created a new fontpath, where it omitted $SPECROOT/lib/X11/fonts/misc and all directories that did not exist on the SPECTRUM machine. The Install-Tools/setup.{c,k}sh script would remove any directories from the fontpath on the remote display X server that did not match the fontpath of the SpectroSERVER machine. Other applications dependent on the remote would display X server fontpath settings.

The resolution was to modify SPECTRUM's Install-Tools/setup.{c,k}sh script to stop removing fonts from the X fontpath upon evaluation.

6. The problem was that there was no derivation point available for Third Party developers to provide the security string inheritance feature for new hierarchical views.

The resolution was to correct the inheritance of security strings to allow Third Party developers to extend security string inheritance and derive from the Security_Model model type.

7. The problem was that the SpectroSERVER process would reach 100% after only a few days of running on a Solaris workstation. The cause was an infinite loop being executed inside the VNM's Rollup intelligence between a Rtr_Cisco model and multiple unmanaged DTE models that were connected to it. As an alarm was generated on the Rtr_Cisco, it changed the unmanaged DTE model's rollup condition, which changed the Rtr_Cisco model's rollup condition, and so on.

The resolution was to remove the CONNECTS_TO relation from the Rollup_Child_Rels attribute for the unmanaged DTE model type.

8. The problem was that the RFC1516 applications and the ones like it have their own reconfiguration time interval and no event was being created when the applications were reconfigured. The CONFIGINTERVAL attribute is set to 60 seconds by default. Pipes between devices were being lost as a result of these unmonitored reconfigurations because the configuration interval of the applications did not match that of the parent device.

The resolution was to add the ability to manually change the configuration interval attribute through the Configuration view of a given device or application. Specifically, this can be done with the Redundancy and Model Reconfiguration options. Now you can set the configuration interval of the applications to match that of its parent device.

9. The problem was that models with no network address were being included in the results of a multi-attribute "Find" for models despite the given Find criteria. The criteria was for models that were green and had a certain prefix in their network address.

The resolution was to fix the Find function so that such a multi-attribute search would not display models with no network address where particular network addresses were specified.

10. The problem was that LANs or WA_Links were not being created by AutoDiscovery or through manual device reconfiguration after Cisco 2500 routers were replaced with Cisco 3640 routers.

The resolution was to correct the code so that LANs or WA_Links will be successfully created after AutoDiscovery or manual device reconfiguration of Cisco 3640 routers.

11. The problem was that an ATM_Network model would remain green even after all the devices it was connected to adopted a CONTACT LOST status.

The resolution was to enable the ATM_Network model to achieve a CONTACT LOST status when all the devices it is connected to have that status.

12. The problem was that when a packed VIB was used to represent the contents of a map view, any pipe that was drawn to the view would be lost when the SpectroSERVER was stopped and restarted.

The resolution was to change the MAPAPI object, CsPackedVib, so that pipes would not be lost in the above scenario.

13. The problem was that duplicate events were being created when a primary and secondary SpectroSERVER were using the same Archive Manager. The secondary server was configured with the secondary_polling flag set to TRUE so that the secondary server was ready when the switchover to the secondary server occurred. The result was that both the primary and secondary servers generated Contact Lost events when a device went down.

The resolution was to change the code so that the secondary server will drop all events once they have been used to trigger inference handlers and generate alarms. A flag ("drop_secondary_events", default=TRUE) was added that allows administrators to override the aforementioned functionality. The flag may be defined in the **.vnmrc** file, but by default, the **.vnmrc** file will not contain the flag.

14. The problem was that MALT was not acknowledging "Existing Connections" even though the connected device was modeled in the database and was physically connected to another device in the database.

The resolution was to change the MALT code so that the "Existing Connections" box would be acknowledged when a device is modeled in the database and physically connected to another device in the database.

15. The problem was that the Enterprise Alarm Manager was not launching for a user who did not have permissions to do a "Find" on the VNM model (i.e., a Read-Only user).

The resolution was to allow the Enterprise Alarm Manager to be launched for a Read-Only user without having to change the community string of the user model.

CS3 Known Anomalies

The following SPECTRUM 5.0rev1 anomalies are associated with this release of CS3/MMS3.

1. SNMP agents on certain devices will report back inconsistent chassis configuration information, causing pipes to disappear between board models in the Topology view. This will occur when the SNMP agent reports a configuration omitting one or two boards on one read and then includes the boards on the next read. The chassis configuration intelligence will remove the board models on the first read and then put them back (or create new models) on the next. If a new board model is created, new port models will also be created and any connections to the previous port models will be lost.This will be addressed in a future release of SPECTRUM.

2. Memory usage and CPU utilization grow while selecting device configurations within Enterprise Configuration Manager. This will be addressed in a future release of SPECTRUM.

3. SPECTRUM 5.0rev1 improperly handles the situation when a device returns a different number of values to fill the various columns of a table. When this happens, all but the table column with the largest returned value disappears from the view. This will be addressed in a future release.

4. SpectroSERVER stops sending out SNMP and ICMP requests and, therefore, alarms are either not generated or not cleared when they should be. This is caused by a relation loop in the database. This problem was addressed in Spectrum_5.0rev1.D35 against CS2/MMS2 and will be addressed in a future release of SPECTRUM.

5. The Internal Port Link Status (IPLS) attribute does not have an enumeration for the DORMANT state. On a device where the interface is DORMANT, the IPLS will carry a state of GOOD. When a port transitions from UP to DORMANT, the IPLS of the port model does not change, and vice versa. No evidence of the translation is reflected. This problem has been addressed in Spectrum_5.0rev1.D38 against CS2/MMS2 and will be addressed in a future release of SPECTRUM.

6. The ability of a FanOut and/or Unplaced model to provide alarms on their connected port's status was removed from SPECTRUM 5.0rev1. The present workarounds for this problem are:

   a. Create SpectroWatches that would generate an alarm if either the ifOper or ifAdmin status of the port was other than 1.

   b. Turn Live Pipes on for the links of the monitored interfaces and change the filter in the Alarm Manager to show Maintenance alarms. When an interface goes down, the pipe will turn BROWN and the interface gets a BROWN alarm.

   The previous ability of a FanOut and/or Unplaced model to provide alarms on their connected port's status will be re-engineered and introduced in a future SPECTRUM release.

7. The Create_Sub_Interfaces attribute is set to TRUE for device models that possess subinterfaces. Therefore, subinterface models will be modeled and visible in the DevTop view of SPECTRUM. It should be set to FALSE so that an over abundance of models are not created and the view is not presented in a confusing manner. This problem will be addressed in a future SPECTRUM release.

8. If contact is lost to a device that has CSIIfPorts, the port model will turn BLACK and the port model text will be deleted. This is because the switch statement is set to revert to the Iib default when contact is lost. In a future release of SPECTRUM, the port model will no longer turn BLACK when contact is lost to a device that has CSIIfPorts. Instead, the banner of the view will indicate the contact status and the port model will remain the way it was when contact was lost.

9. Pipes and links are not automatically made by SPECTRUM if a model is meant to connect to another model outside and higher than itself in a hierarchy. However, SPECTRUM has no problem automatically drawing pipes and links from one model to another deeper than itself in a hierarchy. In a future release of SPECTRUM, pipes and links will be automatically drawn by SPECTRUM in both cases.

10. When SPECTRUM is built and run on Solaris 2.5.1 with the 4.0 C++ compiler, SpectroSERVER will core dump when the number of permitted characters is exceeded in a SpectroWatch expression. There are no plans to address this in SPECTRUM 5.0rev1. Future

releases of SPECTRUM will be built with the Solaris 5.0 C++ compiler.

11. On Windows NT systems, the TFTP Download view in NetWideApp does not list multiple 6H202-24s when selected for download. Selecting a single device does work.

Chapter 4

MMS3 Software Characteristics

This chapter describes the contents of the MMS3 software.

MMS3 provides updated and additional management modules and support as described in this chapter. The following topics are covered:

- *New Support and Functionality in MMS3* (see below).
- *Problems Resolved in MMS3*, starting on Page 4-5.
- *MMS3 Known Anomalies*, starting on Page 4-14.
- *Management Modules Included in MMS3*, starting on Page 4-18.

New Support and Functionality in MMS3

The MMS3 software provides SPECTRUM 5.0rev1 with support for the items described below.

Cabletron Management Modules

SM-CSI1077, CyberSwitch IP Routers

Added support for SSA_7xx. Also, support for HSIM_SSA7xx added to management modules supporting this HSIM.

SM-CSI1082, SmartSwitch 6000 Fast Ethernet Switches

Added support for the 6H262-18 module.

SM-CSI1085, Cabletron ATM - Zeitnet

1. Management module updated from Beta to FCS.
2. Added support for the SmartSwitch 6500.
3. Added support for System Software Version 2.03.

SM-CSI1095, STS16 Token Ring Switch

Added port resolution to this Beta management module.

SM-CSI1096, Flow Point SSR-250 ADSL DMT Router

New Beta management module supporting flow point devices.

SM-CSI1097, DOCSIS

New Beta management module supporting Data Over Cable System Interface Specification (DOCSIS) compliant cable modems.

SmartSwitch 9000

Added UPS support from the ctUPS MIB. The Chassis Environmental view displays UPS information. There is also a Details view that is accessed by clicking the UPS/Battery section and bringing up the Icon Subviews menu.

Third Party Management Modules

SM-3CM1009, 3Com SuperStackII/FMS TR Hub

Added traps.

SM-3CM1010, 3Com US Robotics Modem

New Beta management module supports US Robotics modem pool.

SM-3CM1011, 3Com Linkswitch 1100/3300/3400

1. Management module updated from Beta to FCS.
2. Added support for firmware 2.21.

SM-CAT1005, Catalyst 29xx

Management module updated from Beta to FCS.

SM-CAT1006, Catalyst 4xxx

New Beta management module supports the Catalyst WS-C4003, WS-C4912, and WS-C2948.

SM-CIS1004, Cisco Access Server

Cisco Voice Application (CiscoVoiceApp) no longer included in this management module; it is packaged separately as SM-CIS1006.

SM-CIS1005, Cisco 3810

1. Management module updated from Beta to FCS.
2. Cisco Voice Application (CiscoVoiceApp) no longer included in this management module; it is packaged separately as SM-CIS1006.

SM-CIS1006, Cisco Voice Application

New Beta management module. (See SM-CIS1004 and SM-CIS1005.)

SM-SYN1001, Synoptics 3000

Ports can now be enabled after they have been partitioned due to LattisSecure.

SM-WEL1003, Bay Networks Wellfleet Router

1. Added wf03ISDN_App, wf03DLS_App, and wf03WCP_App for the ISDN, DLS, and WCP MIBs.
2. Device Chassis view now provided. **Device > Chassis** selection now available from the Icon Subviews menu of wf01FDDI_App and wf03FDDI_App.
3. Management module now supports 13.X firmware.

Other Added Support and Functionality

Cisco Routers

1. New application, CiscoCSNA_App, supports CISCO-CIPCSNA-MIB.
2. New table, Data Transfer Statistics View, added to CiscoChanApp

Enhancements to WA_Link

1. WA_Link monitors the state of connected links. It now makes Are_You_Up/Are_You_Down requests based not only on SNMP contact but also ICMP. If there is ICMP contact with a device, the model is still considered up.
2. The WA_link no longer goes red if the Community Name is changed on a router connected to a WA_Link.

Enhancements to the Non Persistent Connections Functionality

1. There is now suppression of linkDown alarms from a dialup port on routers monitored via SPECTRUM.
2. There is improved dial backup management of remote routers.

Problems Resolved in MMS3

The following problem resolutions have not been addressed in any previous off-cycle releases.

Cabletron Management Module Problem Resolutions

SM-CSI1012, FDMMIM

For the FDDI and Ethernet ports, the Port Configuration view no longer generates the error message: `Model to read from is Null`.

SM-CSI1022, Cabletron MicroMMAC-E

1. Condition colors for CSIIfPorts now display correctly.
2. The NetWideApp utility now successfully launches for the MicroMMAC device.

SM-CSI1030, SmartSwitch 9000

When a MMAC+ card is modeled, the serial number attribute (0x10030) is filled in with device data. When the card is replaced in the chassis, the serial number no longer remains unchanged.

SM-CSI1064, FNET 10/100/ELS10-26/ELS100

In the GIB files GnSNMPDev/CsRdndOpt.30, Els100_TxG/CsRdndOpt.30, and Els100_TxM/CsRdndOpt.30 for the NetVantage ELS100-24TX, the two attributes If_IsAutoCnfgActive (id=0x11dd4) and Rdnd_CheckGenAlarms (id=0x11dd6) are now correct.

SM-CSI1064, ELS100-24TX

1. This device no longer fails AutoDiscovery and have its model placed in Lost & Found.
2. The ELS100-TXM and ELS100-TXG are now being modeled with the proper model type name. The ELS100-24TX models and AutoDiscovers as Els100_Tx, the ELS100-24TXM models and AutoDiscovers as a Els100_TxM, and the ELS100-24TXG models and AutoDiscovers as Els100_TxG.

SM-CSI1066, SmartSwitch 9000 (9H421_12)

The Port Bridging Status no longer displays UNK (unknown) in the Device Chassis and Device Interface (Bridging mode) views.

SM-CSI1068/1080, SmartSwitch 2000 Ethernet and Fast Ethernet

AutoDiscovery and Model by IP now detect duplicate models for all model types. If a duplicate model is detected, an error message appears and the model is not created a second time.

SM-CSI1068/1080/1087, SmartSwitch 2000 Ethernet, Fast Ethernet, and Workgroup

Device Chassis views for all model types are now readable and the ports are aligned correctly.

SM-CSI1073, SmartCell Switch

1. The DevTop view now launches appropriately.
2. There was a problem in which the DevTop view would be incorrect when a SmartCell model was created and then a model was created for a SmartSwitch 9000 module in the same chassis. The DevTop view would be for the SmartSwitch 9000 module instead of the SmartCell. The correct DevTop view now displays.
3. Devices that support distributed mode functionality now model correctly. This includes the SFSmartCell and SmartSwitch 6000 DMF mode devices. They appear in the topology if created using the **Model by IP** selection. There is no longer a message: `Error: Model Type of Device XXX.XXX.XXX.XXX already exists and cannot be related to this viewed model. Existing Model: 6C105 of Type 6C105`.
4. Ports of the type ATMIfPort are now modeled in the DevTop view of the 9A656_04 model.

SM-CSI1076, 6E132-25 (Ds3App1407)

1. The Model Information view and DS3/E3 Configuration view no longer contain **???** in some of the information fields.
2. The Ds3App1407 name is now visible when the Application view is in List mode.

SM-CSI1076, 6E132-25 (CtRemoteApp)

1. The ds1 Alarms Circuit Configuration view and the DS3 Extensions view no longer contain **???** in some of the information fields.

2. The CtRemoteApp name is now visible when the Application view is in List mode.

SM-CSI1076/1082/1088, SmartSwitch 6000

1. Devices that support distributed mode functionality now model correctly. This includes the SFSmartCell and SmartSwitch 6000 DMF mode devices. They appear in the topology if created using the **Model by IP** selection. There is no longer a message: `Error: Model Type of Device XXX.XXX.XXX.XXX already exists and cannot be related to this viewed model. Existing Model: 6C105 of Type 6C105`.

2. The Enable/Disable port feature now works when the Application Display is set to 802.1Q VLAN. The **Enable** and **Disable** menu options have been removed from the Icon Subviews menu. There is now a Configuration view that lets you enable and disable the port regardless of the Application Display setting.

SM-CSI1080, SmartSwitch 2000 Fast Ethernet

Port resolution now works correctly for the 2H23_50R model. AutoDiscovery resolves attached devices to a port in the CsRipEnetRptr model.

SM-CSI1082, SmartSwitch 6000 Fast Ethernet

Filtering for 802_1Q_VLAN in the Interface Device view no longer brings up a default icon.

SM-CSI1080/1082, SmartSwitch 2000/6000 Fast Ethernet

1. You can now correctly change the Desired Operational Mode for a Cabletron Fast Ethernet port.

2. On Solaris only, the NetWideApp utility can now successfully tftp download for multiple 6H202-24 and 2H252-25R devices.

SM-CSI1085, Cabletron ATM - Zeitnet

1. Multiple interfaces are no longer mistakenly created if the connection is lost to a device supported by SM-CSI1085 (for example, when the device is rebooted).
2. There are now menu options for Device view and Configuration view when right-clicking on the Device icon.
3. A Duplicate IP alarm notification now occurs when a second ZX-250 is modeled with an IP address used by another ZX-250.
4. The **.rib** files are no longer missing for the ZX-250 Switching Application and ZX_250 management modules.
5. The Admin Status field in the ATM Switch Application Virtual Channel Link view is no longer red boxed.
6. The values for Last Change reported in the Virtual Channel Link view are now the same as those reported in the MIB or in the previous view.

SM-CSI1091, SmartSwitch Router

All interfaces now show in the DevTop view. The problem was that, if a SmartSwitch Router device with more than 133 logical and/or physical interfaces was modeled, only the first 133 would appear in the view. Now up to 200 logical and physical interfaces can be viewed.

SM-CSI1095, STS 16

1. The device model is now correctly placed in an 802.5 during AutoDiscovery, and port resolution is correct.
2. Traps now work correctly.
3. A default GIB is no longer used for the Interface Description view.
4. Port resolution is now completed during AutoDiscovery.
5. Trap support is now provided.

SmartSwitch 2000/6000/9000 Management Modules

1. When modeling SmartSwitch 2000, 6000, or 9000 devices having FDDI HSIMs, bringing up the DevTop view for the FddiMAC models now works correctly. A “Device not configured” message no longer displays.

2. The Special Database option is no longer present in the Device Chassis view. For bridging devices supporting the Special Database, the option is available in the respective CT_BdgTR_App and CT_BdgEnet_App applications.

HSIM-W6 High Speed Interface Module

1. The DevTop view now displays without an error message being generated.

2. The Device Interface view now displays interfaces.

Third Party Management Module Problem Resolutions

SM-3CM1001, 3Com Netbuilder

Traps are now supported for the 3ComNetBldRO.

SM-3CM1004, SM-3CM1007, SM-3CM1008, SM-3CM1011

Device models no longer go red rather than orange when the SNMP agent fails.

SM-3CM1009, 3Com SuperStack

The 3Com FMS Token Ring Hub model now correctly displays two Cascade ports within the Device Chassis view.

SM-3CM1011, 3Com LinkSwitch 1100/3300/3400

The SpectroSERVER no longer core dumps when interfaces go down.

SM-APC1000, American Power Conversion UPS

1. The EventDisp and AlertMap files for the UpsApc92xx (SM-APC1000) have been placed in the correct directory structure and Alarms and Events are received correctly.

2. The following choices for UPS Model are now visible from the Performance view of CtUPSApp: UPS_MODEL_l370, UPS_MODEL_l400, UPS_MODEL_l600, UPS_MODEL_l900, UPS_MODEL_l1250, UPS_MODEL_l2000, UPS_MODEL_MATRX_3000, UPS_MODEL_MATRX_5000, UPS_MODEL_SU_700, UPS_MODEL_SU_1400, UPS_MODEL_SU_2000XL, and UPS_MODEL_APC_GEN.

SM-BAY1000, BayStack Ethernet Hubs

1. The Baystack 350-24T now models as the HubBatSt350 model. It no longer comes up as GnSnmpDev.

2. The HubBaySt450 Large icon and Application Device icon now display in the Device Configuration and Chassis Group views.

SM-CAT1002, Catalyst 5000/5500/5509

1. The Device and DevTop views of the HubCat5000 and HubCat5500 now work correctly. A Port Configuration view with correct fields is accessible by bringing up the Icon Subviews menu on a port in the Device Logical and Device Chassis views.

2. It no longer takes an unusually long time to bring up the Application view of the Catalyst 5000. Polling has been reduced.

3. Bringing up the Configuration view on a HubCat5500 or HubCat5000 no longer causes SpectroGRAPH to terminate.

SM-CAT1002

The Catalyst 1900, 2820, and 3200 devices now AutoDiscover and model correctly. The problem was that a Catalyst 1900, 2820, and 3200 device would be AutoDiscovered and Modeled by IP as a Rtr_Cisco when the Catalyst Management Module was not installed. This was because there was nothing in the system descriptor for these devices that would disqualify them from being modeled as a Rtr_Cisco. The resolution was to give the Rtr_Cisco model type the ability to disqualify all Catalyst devices (including the Catalyst 1900, Catalyst 2820 and Catalyst 3200). The term "atalyst" was added as a disqualification criterion to the CsCisRtrMI.cc is_it_a_10_Rtr_Cisco function.

SM-CAT1003, Catalyst 1900/2820

Catalyst 1900 devices now model correctly as SwCat1900 models and not Rtr_Cisco models.

SM-CAT1004, Catalyst 3200

The SwCat3x00 devices now correctly discover as SwCat3200 models and not Rtr_Cisco models.

SM-CAT1005, Catalyst 29xx

1. A Cisco Catalyst C2924M-XL now models as a HubCat29xx with a device type of Cat_2924MXL. It had been modeling incorrectly with a device type of Cat_2926R.

2. The Off Page Reference Iib for the HubCAT29xx no longer has an extra "**(**" in one of the entries for OPRYArw.Loc (down arrow). Therefore, SpectroGRAPH no longer crashes when navigating into the DevTop view of a newly connected device.

SM-CHP1002, ChipCom OnLine/OnCore Hub

The Corebuilder 5000 (Chipcom ONcore Hub) now discovers correctly with the proper connections to other devices. The problem was that the device would not get placed in the DevTop view under normal modeling circumstances and proper port resolution did not occur.

SM-CIS1001, Cisco Router II

The Configuration view and Interface Configuration table of the Rtr_Cisco model have been modified so that all fields display.

SM-CIS1002, Cisco Lightstream

1. The SpectroSERVER no longer terminates during AutoDiscovery.

2. There are no longer several red boxed fields showing in the Node Statistics view, and the Primary Application button in the Model Information view no longer persists on "Wait..."

SM-CIS1004, Cisco Access Server

1. Dialup_Links are no longer incorrectly created on the Access Server, AS5x00, PPP ports.

2. CiscoView now launches correctly on the NT platform.

3. CiscoView now launches from the Access Server's menu.

SM-CIS1005, Cisco 3810

Alarms are now created on Frame Relay Ports of the Cisco_MC3810 model.

SM-FOR1000, ForeRunner ATM Switch Modules

The Inload and OutLoad watches no longer show a status of Failed in the Watch Editor off of a ForeSwitchApp model type, which had occurred due to an overflow in the binary operator.

SM-GHOXXXX, Host Devices

On systems with a Host management module, the following message no longer appears in the VNM.OUT file and Control Panel: `failure to read attribute: 0x1161009`.

SM-GHO1005, Host IBM

The following components are no longer missing: the model type Empire_UnixApp, the model type Empire_ExtApp, and the file CsVendor/Ctron_Gen_HOST/Host_IBM/AlertMap.

SM-SYN1003, SynOptics 5000 Series

1. You can now clear the yellow alarm and error message "Chassis has not created all the agent models" that generate if one of the NMM agents for the HubSyn5xxx device is not modeled.

2. By preventing IP and community name information from rolling down to the application models, the problem of the HubSyn5xxx, HubSyn5DNxx, HubBaySt10, and HubBaySt100 model types inheriting some undesirable functionality from GnSNMPDev has been eliminated. (These model types do not need their IP and community name information rolled down from the parent model type to the application model as is the characteristic of GnSNMPDev.)

SM-SYN1006, SynOptics 28000 Series

The SpectroGRAPH no longer terminates when accessing the DevTop view of a SwSyn281xx model. This used to occur if the view was accessed and SLAM was installed.

SM-SYN1008, SynOptics Stackable Hubs 2700 Series

The Model Name can now be edited in the Model Information view.

SM-SYN1009, SynOptics Stackable Hubs 2900 Series

The HubSny29xx Large icon now shows the model name at the top. Also, double-clicking it will bring up the SynOptics Chassis Configuration view.

SM-WEL1003, Bay Networks Wellfleet Router

The Rtr_Bay_Wflet interface information is now read from the proprietary interface tables as well as MIB II. In this way, all of the interfaces should be created correctly. The problem was that there was no support for ISDN for such devices as the Wellfleet Series 7 router. Also, ports that were not active for the Rtr_Bay_Wlflet model were not being displayed in various port views.

Other Problem Resolutions

1. Modifying a port's security string now works correctly, i.e., it remains as changed. Previously, any change you made to the port's security string was overwritten with the value of the device model's security string. This was a problem on a variety of model types (e.g., Rtr_Cisco, 2H258_17R, 2H28_08R, and EMME). Security strings are now rolled down from the device to the port level but they do not overwrite user entered values.

2. A problem in which frame relay modeling was destroyed has been fixed. The problem occurred when a frame relay reconfiguration event occurred during a time when there was no contact with the device or the device did not respond in time.

3. Community Name changes now roll down correctly from rfc1512App. If the Community Name is changed on a device that supports rfc1512App, the name will roll down to that application and to the GenFDDISmt_II and GenFDDIMac_II models. Community Name changes no longer cause these models to go red.

4. The Detail button in the Performance view of the ctATMConfigMib application no longer yields a Detail view of a default GIB; it provides the appropriate view.

5. The WA_Link WA_Bandwidth attribute/gib field no longer has Read-Write permissions; it has Read-Only permissions.

MMS3 Known Anomalies

Following are the known anomalies in MMS3, listed as they apply (i.e., by device type, management module number, application, or model type).

SM-CSI1014, Standard RMON App

1. The performance information is red boxed in the Token Ring Promiscuous Segment Performance view.

2. The RMON Suite SPMA will remain blank indefinitely under certain conditions of OID comparison for particular model types. This will be addressed in a future release of SPECTRUM.

SM-CSI1022, MicroMMAC-E

AutoDiscovery hangs indefinitely when reading the Source Address Table for the model StckRptrRev4 of a BRtrCSIuMMAC with a firmware revision of 1.32.03. This will be addressed in a future release of SPECTRUM.

SM-CSI1030, SmartSwitch 9000 (9E132_15)

When a SmartSwitch 9000 is modeled using a Gen9000 Model Type, the serial number for the device is not displayed in the Banner of the Configuration, Performance, and Model Information views.

SM-CSI1035, SmartSwitch 9000 FDDI INB Switch

The 9F426-02 and 9F426-03 modules only support RMON events and alarms and actions. This will be addressed in a future release of SPECTRUM.

SM-CSI1077, HSIM_SSA_7xx, SSA_7xx

Trap support is not currently working for these models. This will be fixed in a future release of SPECTRUM.

SM-CSI1085, Cabletron ATM - Zeitnet

1. The ZX-250 Switch Application Port Table view may report the wrong number of ports. The **Num of Ports** field may not correspond to the number of ports listed in the table. This is a firmware related problem that is fixed with firmware 2.03.28 or greater.

2. The Switching Application Interface Configuration view is missing the IfIndex and Max VPCs columns. This is a firmware related issue.

3. When you double-click one of the rows in the Switching Application AAL5 VCC Performance view, the Detail view displays with red boxes around VPI and VCI. This is a firmware related issue.

4. There may be red boxes in the CAC Stats view of the Switching Application for all model types. This is a firmware issue that is fixed with firmware 2.2.8 or greater.

5. The Load values in the Performance views for the interfaces (Device Interface view and DevTop view) show FAILURE. This is a firmware issue that will be fixed in a subsequent release.

6. When a ZX-250 is modeled, there may be attached SW_Link models. The Performance view of the SW_Link will show all values as FAILURE instead of the correct values.

7. Interfaces in the DevTop view for a ZX-250 may be labeled incorrectly. This is a firmware related issue.

8. The Ethernet, Software Loopback, and LAN emulation interfaces in the Device Interface and DevTop views of a 9A100 may not be addressed properly. This is a firmware related issue.

9. Several fields are red boxed in the Switching Application System Extensions view for an SS6500_CSM. This is a firmware related issue.

10. Several fields are red boxed in the Switching Application System Information view for an SS6500_CSM. This is a firmware related issue.

11. For firmware version 02.04(9), the UNI Versions Table is showing blank. This table, which can be accessed from the Switching Application, shows correctly for earlier firmware versions.

SM-CSI1091, SmartSwitch Router

1. The SmartSwitch Router may show incorrect data after the device configuration is changed and a reconfigure is run on the device model in SPECTRUM. Specifically, the SlotPortIndex attribute does not get updated. Subsequently, the port models in the DevTop

Interface view and the Chassis or Device Interface views display incorrect information. This problem will be addressed in a future release of SPECTRUM.

2. The SSR_PortIf icons are missing information, particularly VLAN information. This will be addressed in a future release of SPECTRUM.

SM-CSI1095, STS16 Token Ring Switch

1. When in the Device Chassis view, selecting **Print** from the File menu and then clicking **Print View** and **OK** results in a distortion of the images on the right side of the view.

2. The DevTop Chassis view does not work properly for connecting to other devices; you should use the DevTop Interface view.

SM-3CM1001, 3Com Netbuilder

The 3ComNetBld2 model type models GnSNMPDev when using Model by IP. A workaround for this problem is to use the Model Type Editor to change the Desc_Key_Word to read: **`SW/NBII;SW/NB`**. This problem will be addressed in a future release of SPECTRUM.

SM-3CM1007, 3ComLinkSwitch 1000

In the Security Users view on Windows NT systems, a message box displays when an "Add Entry" action fails. Selecting the **OK** button sometimes causes the SpectroGRAPH to exit.

SM-3CM1010, 3Com US Robotics Modem

A default GIB view will appear if the Performance view of the HubUSRMP is accessed from the Alarm view. The Performance view can be accessed from other views.

SM-3CM1011, 3Com LinkSwitch 1100/3300

When in the Device Chassis view, selecting **Print** from the File menu and then clicking **Print View** and **OK** results in a distortion of the images on the right side of the view.

SM-BAY1000, HubBayStack 450

1. On UNIX systems, a default GIB displays for the Detail view that is accessed from the Icon Subviews menu of the ports in the Device, Logical, and Devtop views (BS450_24 board).

2. When the HubBaySt450 is connected to a LAN or Universe container, the Off-Page Reference is a Large Device icon instead of the triangular OPR icon.

SM-CAT1005, Catalyst 2900

Red boxes display around the information area of the Port Configuration view accessed off of Port 1 in the Device view of the HubCat29xx, while other ports appear OK.

SM-CAT1006, Catalyst 4xxx

There is no Alert Map for the SwCat4xxx.

SM-CIS1002, LightStream 1010

1. The PNNI_App Information view Primary Application button displays "wait..." This button will be removed in a future release.

2. The default values for the SWinLoad and SWoutLoad SpectroWATCHes are incorrect for the LS_IF_Port. The workaround for this is to use the Model Type Editor to change the attribute values as shown below. This will be addressed in a future release of SPECTRUM.

   SWinLoad:

   9D.5.1.0.56.1.0.0.1.0.0.A9.AF.1.22.0.1.91.0.22.0.0.0.0.0.32.0.0.
   0.99.C.0.0.0.24.3.0.0.0.41.E.1.0.0.2F.0.0.0.41.E.1.0.0.22.0.0.0.0.
   7.0.0.0.0.2F.0.0.0.0.0.0.0.0.E.0.0.0.20.3.0.0.0.77.1.22.0.0.29.0.0.
   0.0.E.0.0.0.0.1.0.0.0.20.3.0.0.0.D.0.0.0.0.23.0.0.0.0

   SWoutLoad:

   9D.5.1.0.56.1.0.0.1.0.0.A9.B0.1.22.0.1.92.0.22.0.0.0.0.0.32.0.0.
   0.99.C.0.0.0.24.3.0.0.0.42.E.1.0.0.2F.0.0.0.42.E.1.0.0.22.0.0.0.0.
   7.0.0.0.0.2F.0.0.0.0.0.0.0.0.E.0.0.0.20.3.0.0.0.77.1.22.0.0.29.0.0.
   0.0.E.0.0.0.0.1.0.0.0.20.3.0.0.0.D.0.0.0.0.23.0.0.0.0

SM-CIS1006, Cisco Voice Application

Column titles fail to appear in the Gateway Call History table. This will be fixed in SPECTRUM Version 5.2.

SM-WEL1003, Rtr_Bay_Wellfleet

1. In the wf03ATM_App Information view, the primary application is displaying "wait..." Also, there are red boxes around the **Primary Address** and **User-Defined Type** fields in the Banner of the Information view.

2. The views of the wf04FDDI_App application do not show correctly. The Chassis view does not appear correctly and the Icon Subviews menu show as default GIBs.

3. The Chassis view of the wf03FDDIApp application in a Rtr_Bay_Wflet Application view appears blank. Only the Banner is present.

Management Modules Included in MMS3

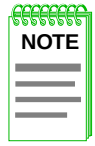
The MMS3 software includes the following management module categories:

- Management modules previously provided, some of which have been updated in MMS3.
- Additional First Customer Ship (FCS) management modules that were not available on MMS2.
- FCS management modules that were Beta in MMS2.
- Additional Beta management modules.

The following pages list the management modules in three groups, i.e., Cabletron, Third Party, and Beta.

Cabletron Management Modules in MMS3

Table 4-1 lists all of the Cabletron management modules included in the MMS3 software.



In the table below, an asterisk (*) beside the Part Number denotes a management module that has been incorporated in a maintenance release for the first time. An asterisk (*) beside the Model Type name denotes a new model type that has been added by MMS3. A double asterisk (**) beside the part number denotes a management module that was a Beta product and is now FCS. In any case, for proper operation of your SPECTRUM 5.0rev1 system, you must re-install from MMS3 all Cabletron management modules that are in your current SPECTRUM database.

Table 4-1. Cabletron Management Modules Included in MMS3

Part Number	Model Type	Management Module
SM-CSI1000	Hub_CSI_MRXi Hub_CSI_IRBM Hub_CSI_IRM2 Hub_CSI_IRM3 Hub_CSI_MiniM Hub_CSI_SIRM	Cabletron Ethernet Repeater Hubs
SM-CSI1004	HubCSIEMME BRtrCSIEMM_E6	Cabletron EMME, Cabletron EMM_E6
SM-CSI1011	HubCSIMRXi	MRXI-22/24
SM-CSI1012	BdgCSIFDM	Cabletron FDM MIM
SM-CSI1014	N/A	RMON
SM-CSI1015	HubCSITRXI	Cabletron TRXI
SM-CSI1016	BdgCSITRBM	Cabletron TRBM
SM-CSI1020	HubCSISEHI	Cabletron SEHI-22/24/32/34
SM-CSI1021	BRtrCSINBR620	Cabletron NBR-620/420/220
SM-CSI1022	BRtrCSIuMMAC	Cabletron MicroMMAC-E
SM-CSI1023	HubCSITRMM	Cabletron TRMM

Table 4-1. Cabletron Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-CSI1024	BdgCSIETW	Cabletron ETWMIM
SM-CSI1025	HubCSITRMMIM	Cabletron TRMMIM
SM-CSI1029	N/A	Routing Services
SM-CSI1030	9E132_15 9E133_36 9E138_12 9E138_36	SmartSwitch 9000 Ethernet MicroLAN Switch Modules
SM-CSI1031	9F116_01	SmartSwitch 9000 FDDI Switch Module
SM-CSI1032	9F120_08 9F122_12 9F125_08 9F241_12	SmartSwitch 9000 FDDI MicroLAN Modules
SM-CSI1035	9F310_02 9F426_02 9F426_03	SmartSwitch 9000 FDDI INB Switch Modules
SM-CSI1036	9E312_12 9E423_24 9E423_36 9E428_12 9E428_36 9E429_12 9E429_36	SmartSwitch 9000 Ethernet INB Switches
SM-CSI1037	N/A	Ring View for FDDI
SM-CSI1038	9T122_08 9T122_24 9T125_08 9T125_24	SmartSwitch 9000 Token Ring MicroLAN Switch Modules
SM-CSI1039	BRtrCSIESXW BRtrCSIESXM	ESX Devices (1320/1380, MIM/ MIM-F2)

Table 4-1. Cabletron Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-CSI1040	HubCSITRMM2	Cabletron TRMM2
SM-CSI1041	HubCSITRMM4	Cabletron TRMM4
SM-CSI1052	BRtrCSIummact	Cabletron MicroMMAC-T
SM-CSI1053	HubCSISTHI	Cabletron STHI
SM-CSI1055	9E106_06	SmartSwitch 9000 Ethernet Module
SM-CSI1059	9A128_01 9A426_01 9A426_02	SmartSwitch 9000 ATM Access Module
SM-CSI1062	7C03 7C04 7C04R	SmartSwitch 7000
SM-CSI1064	CSI_FNET10 CSI_FNET100 CSI_ELS10 CSI_ELS100 Els100_Tx Els100_TxG Els100_TxM	FNET10/100/ELS10-26/ELS100
SM-CSI1066	9H421_12 9H422_12 9H423_26 9H423_28 9H429_12	SmartSwitch 9000 Fast Ethernet INB Modules
SM-CSI1068	8H02_16 2E42_27 2E43_27 2E48_27 2E49_27 2E43_51 2E253_49R	SmartSwitch 2000 Ethernet Switches

Table 4-1. Cabletron Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-CSI1072	FrameRelayDTE	Frame Relay Manager
SM-CSI1073	SFSmartCell	SmartCell Switch
SM-CSI1074	9G421_02 9G426_02 9G429_02	SmartSwitch 9000 Gigabit Ethernet SmartSwitch Modules
SM-CSI1075	HubCSISEHI100	SEHI100TX-22
SM-CSI1076	6E122_26 6E132_25 6E123_26 6E133_25 6E128_26 6E129_26 6E138_25 6E139_25 6E123_50 6E133_49 6E233_49	SmartSwitch 6000 Ethernet Switches
SM-CSI1077	CSX200 CSX400 CSX5500 CSX7000 9WOOX SSA-7xx*	CyberSwitch IP Routers
SM-CSI1078	FRX4000 FRX6000	FRX Family
SM-CSI1079	SmartMIM_216	SmartMIM-216

Table 4-1. Cabletron Management Modules Included in MMS3 (Continued)

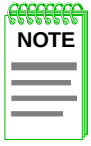
Part Number	Model Type	Management Module
SM-CSI1080	2H22_08R 2H28_08R 2H252_25R 2H23_50R 2H33_37R 2H253_25R 2H258_17R	SmartSwitch 2000 Fast Ethernet Switches
SM-CSI1082	6H122_08 6H122_16 6H123_50 6H128_08 6H129_08 6H133_37 6H202_24 6H203_24 6H252_17 6H253_13 6H258_17 6H262_18*	SmartSwitch 6000 Fast Ethernet Switches
SM-CSI1083	9T425_16 9T427_16 9T428_16	SmartSwitch 9000 Token Ring Switches
SM-CSI1085**	ZX_250 SS2500 SS6500_CSM 6A000 9A100	Cabletron ATM-Zeitnet Devices
SM-CSI1087	2M46_04	SmartSwitch 2000 Modular WorkGroup Switch
SM-CSI1088	6M146_04	SmartSwitch 6000 Carrier Switch

Table 4-1. Cabletron Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-CSI1091	SmartSwRtr	SmartSwitch Router
SM-CSI1092	9M426_02	SmartSwitch 9000 Dual Slot Carrier Module

Third Party Management Modules in MMS3

Table 4-2 lists all of the third party management modules included in the MMS3 software. Some of these may have been updated in MMS3.



In the table below, an asterisk (*) beside the Part Number denotes a management module that has been incorporated in a maintenance release for the first time. An asterisk (*) beside the Model Type denotes a new model type that has been added by MMS3. A double asterisk (**) denotes a management module that was previously a Beta product and is now FCS. In any case, for your SPECTRUM 5.0rev1 system to operate properly, you must re-install from MMS3 all third party management modules that are in your current SPECTRUM database.

Table 4-2. Third-Party Management Modules Included in MMS3

Part Number	Model Type	Management Module
SM-3CM1001	3ComNetBld 3ComNetBld2 3ComNetBldRO	3Com Netbuilder
SM-3CM1004	Hub3Com10BTi Hub3ComFMS Hub3ComMSH Hub3ComSS10	3Com FMS/MSH/10 LinkBuilder/10BTi Stackables

Table 4-2. Third-Party Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-3CM1006	HubLp4xXXX CoreBldr3500	3Com Lanplex
SM-3CM1007	Hub3ComLS1000 Hub3ComLS3000	3Com LinkSwitch 1000/3000
SM-3CM1008	Hub3ComPortSw	3Com PortSwitch Hub
SM-3CM1009	Hub3ComSSTR Hub3ComSSTR_A	3Com SuperStackII/FMS TR Hub
SM-3CM1011**	Hub3ComLS1100 Hub3ComLS3300 Hub3ComLS3400	3Com LinkSwitch 1100/3300/ 3400
SM-APC1000	UpsAPC92xx	American Power Conversion UPS
SM-ASC1000	ST1kNode	Ascom Timeplex ST-1000
SM-ASD1000	Ascend_MAX	Ascend
SM-ATT1000	Hub_ATT_SMART	ATT Smartlan Hub
SM-BAY1000	HubBaySt100 HubBaySt10 HubBaySt15x HubBaySt300 HubBaySt350 HubBaySt450	BayStack Ethernet Hubs
SM-BAY1001	HubBaycent100	Bay Networks Centillion 100
SM-BAY 1002	Accelar	Accelar
SM-CAT1000	SwCat1200	Catalyst Workgroup Switch
SM-CAT1001	HubCat1400	Catalyst Workgroup Concentrator

Table 4-2. Third-Party Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-CAT1002	HubCat5000 HubCat5002 HubCat5500 HubCat5505 HubCat5509	Catalyst 5000/5500/5509
SM-CAT1003	SwCat1900 SwCat2820	Catalyst 1900/2820
SM-CAT1004	SwCat3200	Catalyst 3200
SM-CAT1005**	HubCat29xx	Catalyst 29xx
SM-CHP1002	CComONline_emm CComONline_fmm CComONline_trm CComONcoreAMGT CComONcore_dmm	Chipcom OnLine/OnCore Hubs
SM-CIS1001	Rtr_Cisco Rtr_CiscoAGS Rtr_CiscoCGS Rtr_CiscoIGS Rtr_CiscoMGS Rtr_CiscoMIM Rtr_Cisco2500 Rtr_Cisco3000 Rtr_Cisco4000 Rtr_Cisco7000 Rtr_CiscoMIM3T	Cisco Router II
SM-CIS1002	LS_1010	Cisco Lightstream
SM-CIS1003	StrataCom	Cisco StrataCom BPX Service Node
SM-CIS1004	AS5x00	Cisco Access Server
SM-CIS1005**	Cisco_MC3810	Cisco 3810
SM-DLS1000		IBM DLSW and APPN

Table 4-2. Third-Party Management Modules Included in MMS3 (Continued)

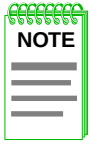
Part Number	Model Type	Management Module
SM-ERC1000	MD110_PBX	Ericsson ND110
SM-FOR1000	ForeRunner	ForeRunner ATM Switch Modules
SM-GHO1000	GenericHost	Third Party PC and Workstation
SM-GHO1001*	Host_Sun	Host Sun
SM-GHO1002*	Host_SGI	Host SGI
SM-GHO1003	Host_HP	Host HP
SM-GHO1004	Host_NT	NT Host
SM-GHO1005*	Host_IBM	Host IBM
SM-GHO1006*	Host_DEC	Host DEC
SM-GHO1007	Host_Compaq	Host Compaq
SM-HPH1000	HPAdvStkHub	Hewlett Packard Advance Stack Hub
SM-KEN1001*	DataSMART_xxx	Kentrox DataSmart 554, 558, 584, 588, 656, 658, 680, 681, 686, and 688
SA-NVG1000		Netview Gateway Application
SM-SYN1001*	HubSynSer3xxx HubSynTR 3xxx	Synoptics 3000 Series
SM-SYN1002	HubSynEnet28xx	SynOptics Stackable Hubs (2800 Series)
SM-SYN1003	HubSyn5xxx	SynOptics 5000 Series
SM-SYN1006	SwSyn281xx	SynOptics 28000 Series
SM-SYN1007	HubSyn5DNxxx	SynOptics Distributed 5000 Series

Table 4-2. Third-Party Management Modules Included in MMS3 (Continued)

Part Number	Model Type	Management Module
SM-SYN1008	HubSyn27xx	SynOptics Stackable Hubs 2700 Series
SM-SYN1009	HubSyn29xx	SynOptics Stackable Hubs 2900 Series
SM-UNB1001	HubUB7xx....	Ungermann-Bass Hub II
SM-WEL1003	Rtr_Bay_Wflet	Bay Networks Wellfleet Router
SM-XYL1001	Xyp_MaxServer Xyp_ETSMIM	Xplex MaxServer and ETSMIM

Beta Management Modules in MMS3

Table 4-3 lists the Beta management modules that are included in the MMS3 software.



In the table below, an asterisk (*) beside the Part Number denotes a Beta management module that has been added by MMS3. An asterisk (*) beside the Model Type denotes a new Beta model type that has been added by MMS3. Some of the Beta management modules listed in the table may have been updated in this release. In any case, for your SPECTRUM 5.0rev1 system to operate properly, you must re-install from MMS3 all Beta management modules that are in your current SPECTRUM database.

Table 4-3. Beta Management Modules Included in MMS3 Software

Part Number	Model Type	Management Module
SM-3CM1010*	HubUSRMP	3Com US Robotics Modem
SM-CAT1006*	SwCat4xxx	Catalyst 4xxx
SM-CIS1006*		Cisco Voice Application
SM-CSI1095	STS16	STS16 Token Ring Switch
SM-CSI1096*	Generic_SSR_FP	FlowPoint SSR-250 ADSL DMT Router
SM-CSI1097*	GnCableModem GnCableModemTS	DOCSIS

Chapter 5

Software Superseded by CS3/MMS3

This chapter describes the patches and problem resolutions that were previously issued for SPECTRUM 5.0rev1 and are being superseded by the CS3/MMS3 software.

CS3/MMS3 supersedes CS1/MMS1, CS/MMS2, and the following previously issued SPECTRUM 5.0rev1 off-cycle releases (Patches) and other problem resolutions.

- The off-cycle releases (Patches) that were originally superseded by CS1/MMS1.

  See the Section titled *Patches Originally Superseded by CS1/MMS1*, starting on Page 5-2.

- Other problem resolutions provided by the CS1/MMS1 software.

  See the Section titled *Other Resolutions Included in CS1/MMS1*, starting on Page 5-7.

- The off-cycle releases (Patches) issued since the CS1/MMS1 release.

  See the Section titled *Patches Issued After the CS1/MMS1 Release*, starting on Page 5-10.

- Other problem resolutions provided by the CS2/MMS2 software.

See the Section titled *Problems Resolutions Included in CS2/MMS2*, starting on Page 5-32.

- The off-cycle releases (Patches) issued since the CS2/MMS2 release.

  See the Section titled *Patches Issued Since the CS2/MMS2 Release*, starting on Page 5-34.

Patches Originally Superseded by CS1/MMS1

The following SPECTRUM 5.0rev1 off-cycle releases (Patches) were originally superseded by the CS1/MMS1 software and are now being superseded by the CS2/MMS2 software.

SPECTRUM_5.0rev1.P01

Obsoleted by P16.

SPECTRUM_5.0rev1.P02

AutoDiscovery is requesting process status every 2-5 seconds.

AutoDiscovery is not reading all ranges in list.

When using the DisSysOIDList function and running AutoDiscovery, for each device in the network that answers the sysOID request and each device that does not match what is in the DisSysOIDList attribute, the SnmpPif is being created but not removed.

The AutoDiscovery status window blanks out or freezes after P49 patch is installed.

After you start AutoDiscovery while Online Backup is running, AutoDiscovery will not stop until the Online Backup is complete.

SPECTRUM_5.0rev1.P03

Obsoleted by P11.

SPECTRUM_5.0rev1.P04

A request has been made to add a "flagable" option so that child attribute information is not gathered. Without it, the Server pegs at 98% for the time (3+minutes) it takes to gather attributes.

The mask strings stored in the description field for a 4.0rev3 configuration are not shown in the Mask window when that configuration is imported into 5.0.

Capturing of host configurations from a HubCat5000 (having brought up Ecm through the CatStackAPP application) fails.

Capturing a host configuration from a router by following the directions in the user's manual fails.

After creating and saving a template with all attributes, select the template. No attributes show on the right hand side where the list usually is.

SPECTRUM_5.0rev1.P05

Generating multiple html reports gives the same header for each.

There are problems with printing to A4 paper in tabular reports.

Change scheduled reports to use SpectroSHELL.

In a summary report, either created through the report formatter or with the included UpDownExec.rib, a line break is included after each summary.

Saving the print command in default.PRF for reports causes .gif creation failure.

SPECTRUM_5.0rev1.P06

5.0rev1 SANM cannot handle distributed environments if one environment is a SpectroSERVER running SPECTRUM 4.0rev3.

SPECTRUM_5.0rev1.P07

5.0rev1 ARS Gateway cannot handle distributed environments if one environment is a SpectroSERVER running SPECTRUM 4.0rev3.

SPECTRUM_5.0rev1.P08

Obsoleted by P16.

SPECTRUM_5.0rev1.P09

SAS export gives incomplete results for some model entries.

SPECTRUM_5.0rev1.P10

Obsoleted by P16.

SPECTRUM_5.0rev1.P11

Destroying a model in CLI that does not have a model name fails.

Allow the user to configure the timeout value in the configuration file (.vnmshrc).

SPECTRUM_5.0rev1.P12

Obsoleted by P16.

SPECTRUM_5.0rev1.P13

coreBuilder5000 fails to get correct bridge MIB information.

SPECTRUM_5.0rev1.P14

Obsoleted by P16.

SPECTRUM_5.0rev1.P15

In 5.0, a user is set up with a security string of USER,0 and a model is set up with USER as the security string. As the user, when you go into the model information view of the model, the security string is "********" because the user does not have ADMIN privileges. The user changes the model name and tries to save the changes. A dialog appears that gives the error stating an “Invalid security string specified.”

SPECTRUM_5.0rev1.P16

Error while retrieving the alarm history information. An error occurred while retrieving the alarm history information for this model. Error: Error 0x6000020 (0x6000020)

Problem with canceling filter when in Modeltypes tab.

Get error message when starting AlarmManager as RO user.

5.0rev1 SANM can't handle distributed environments if one is 4.0rev3 SERVER.

The Alarm Manager does not handle a large number of events well in the Events tabbed page of the information panel.

The History tabbed page should be rolled into 5.0rev1 since it provides information the user really wants. The history page displays all events for a specified model between creation of an alarm and clearing of the alarm.

ForeRunner ports create a red alarm when device attached to the port goes down. These should be yellow alarms.

When changing the Model Name of a Model via the Model Information View the new name does not get propagated to all of its child models.

A READ only user can change the Filter options in the Alarm View.

Filtering on multiple PCauses in the Alarm Manager is not saved to the user model.

SpectroSERVER crashes with a mts:malloc: out of memory message.

FrameRelay is not suppressing the dlci alarm when the router goes down. Two new attributes were added to support this functionality: AlarmLinkedPorts and SuppressLinkedPortAlarms. These two attributes have been added to the LivePipes Information GIB accessed from the VNMs Performance GIB “Application” list. They toggle from TRUE to FALSE.

Live Pipes is not suppressing one of the port alarms when both linked ports are bad and the “Suppress Linked Port Alarms” option is set to TRUE in the Live Pipes GIB.

Watch Editor PGUI will not allow polling interval over 06:28:15.

SpectroSERVER crashes with mts.malloc error after upgrade to 5.0rev0.

SpectroWATCH does not work for calculations like: x=x+y.

When a WA_Link is determining its proper state during re-start, it asks both routers if they are down. The GREEN router responds, “No, I'm up”. The ORANGE router incorrectly responds “Yes, I'm down”. This causes the WA_Link to go RED.

At times we lose contact with LandScapes models.

OnlineBackup fails on first try.

SEHi's are being modeled as GnSNMPDevs.

Change the event generated at VNM shutdown so that it gets sent to the VNM model.

Add CsIHEpiPoll functionality to improve fault isolation for EPI models.

The type fields for some EPI requests are not being set correctly.

If the user model has a Community String other than ADMIN, when they try to connect to the 5.0rev1 SERVER from a 4.0rev3 GRAPH, from the command line, the following error appears and no GRAPH appears.

```
% ./SpectroGRAPH -vnm xxx.xxx.xxx.xxx

Opening a service to xxx.xxx.xxx.xxx

CsSecurity: Error, Error reading user model.

Error Code = 0x1
```

While purifying SPECTRUM 5.0rev1 with CS1/MMS1 and P27 a memory leak was detected.

If the user is filtering with DisSysOIDList, don't create GnSNMPDevs for devices that have a blank sysOID.

There is a problem with router redundancy and router reconfiguration running at the same time.

The customer would like certain types of non-physical interfaces to be modeled. These are the ISDN interfaces that contain the secondary IP Address, and from which the backup link status can be read.

In the I/O Statistics view off the VNM Performance view, data is not displayed in the Network I/O graph if the network card is a hme0 rather than the standard le0 card.

Occasionally the SERVER core dumps when bringing up the I/O Statistics view off the VNM Performance view.

The model name is being duplicated for the CT_Stp_App model of some Cabletron devices. The customer is seeing this for 6H122-08's, 6E132-25's and 6E12-06's. It is happening on some but not all.

AutoDiscovery causes IH Timer Threads to max out and never decrease. Adisc finishes ok but the server seems to get bogged down and performance suffers.

Network load on CsiRptr model is incorrect.

EMM-E6 with two WAN Brims will not configure.

In the IRM2/IRM3 Performance View, the Load is always zero.

Changes in this patch affect all installations which include: SM-CIS1001, SM-CPORT, SM-CSI1072, SM-GEXT, SM-CSI1026, SM-COMBRG, SM-CISAPP, SM-COMRPTR, SM-GENTR, SM-COMMAN, SM-GNBDG, SM-GNRTR1, SM-MMSW, seh, SM-CSI1000 and SM-TRHUBSTK.

Not all DLCI port models appearing on Rtr_Bay_Wflet DTE. The user is unable to edit a default SpectroWATCH off of the DLCI_Port model type.

Destroying any model after performing a find_attr_by_oid crashes the SpectroSERVER.

Purify reports leak in CsIHLostAndFoundDestroy::do_destroy.

SpectroWATCH calculation causes erroneous overflow error.

Cisco routers don't send link up event to clear link down alarm.

SpectroSERVER crashes due to problems with SpectroWATCH.

Other Resolutions Included in CS1/MMS1

The following additional problem resolutions were incorporated into the CS1/MMS1 software and are being superseded by the CS2/MMS2 software.

1. Incorrect SpectroWATCH formulas for PacketRateIn and PacketRateOut
2. Cleaned up memory leaks in ECM
3. Support was added for an indirect Component OID specification attribute. A 3Com device for which a MM is now being developed

does not support a standard table of Board.Ports. The instance IDs of the ports are generated randomly by the device and it is up to the MM developer to translate them into standard Board.Port (e.g. 1.1 1.2 1.3 etc...) mappings. This value is stored in a separate attribute created by the MM developer to be displayed on icons for numbering boards and ports in the UI. The problem is that the ordering done for the chassis view is based on the Component_OID attribute value of the ports. Here is an example:

Component_OID (randomly assigned by device)	Actual Board.Port
12563	1.2
14567	1.1
239099	1.3
etc.....	

As you can see, if we order the ports by the randomly assigned Component_OID value in the device's MIB, the ports will NOT be ordered in the chassis view.

4. Assignment Filter Not Working in Enterprise Alarm Manager. The problem only occurs when saving the assignment filter with the "(Unassigned)" entry in the “Hide” list.
5. Corrupt schema files not handled well in Oracle exports
6. IP Address field was added to Event00010017 & Event0001030a.
7. VNM Polling-Related problems were fixed which increases the VNM performance.

    c. Web AlarmView not updating properly, reading cached pages.

8. Fixed coredump in new APIs.
9. Add CsIHEpiPoll to improve fault isolation for EPI models.
10. NT Install doesn't warn user which Service Pack is needed.

11. The Host Configuration Window during the Verify Operation shows Security Tokens.
12. SpectroGRAPH crashes when a Port Performance View of a device modeled in a remote landscape is scrolled while loading.
13. Running Online Manuals from the SpectroGRAPH, instead of from the Control Panel, can cause an error of “This document could not be found:” when doing a search.
14. ArchMgr very infrequently produces strange output & will not start from CPANEL.
15. Importing a configuration from 4.0rev3 into 5.0rev1 that has attributes that no longer exist in 5.0rev1 will cause the import to fail.
16. Missing aliases “ss”, "sg" and "SPECTRUM" in NT SpectroSHELL.
17. Router Discovery places EMM_E6 in lost&found when routing enabled.
18. Launching Landscape Alarms from a Landscape icon brings up alarms for the SpectroSERVER the client is connected to instead of the selected Landscape icon.
19. Install.tar for any patches including CS1 only includes the components being installed and removes any other components that were installed previously which causes the next patch install to not recognize the complete list of installed components.
20. The SpectroGRAPH may crash after a migration from SPECTRUM 4.0rev3 to SPECTRUM 5.0rev1.
21. ATM port on the 2E42-27 & 2E48-27 is reporting no link.
22. Using the Report Formatter, RibE, to Open and Save any Statistical .rib file will fail.
23. Add PCause information into Event Format files: Event00010701, Event00010702, and Event00010706
24. In a Fault Tolerant environment, the secondary SpectroSERVER may crash.
25. Install error for mtregupd.exe on NT. Unable to locate msjet35.dll.

Patches Issued After the CS1/MMS1 Release

The following SPECTRUM 5.0rev1 patches are superseded by CS2/ MMS2.

SPECTRUM_5.0rev1.P17

Obsoleted by installing CS1/MMS1, P20, and P22.

SPECTRUM_5.0rev1.P18

Running adisc in a LAN with Centillion devices causes the server to core dump.

SPECTRUM_5.0rev1.P19

Obsoleted by the installation of CS1/MMS1 and P21.

SPECTRUM_5.0rev1.P20

Included in P31, P34, P37, P41, and P48.

SPECTRUM_5.0rev1.P21

Included in P33.

SPECTRUM_5.0rev1.P22

Included in P37 and P49.

SPECTRUM_5.0rev1.P23

Included in P43.

SPECTRUM_5.0rev1.P24

MALT is hanging when selecting Port Activity option. When running MALT and trying to find devices attached to SmartSwitch 6000s, both Switch/Bridge and Port Activity options for MALT never complete. This has been seen on databases with over 100 6000s and over 10,000 models in the database.

A number of things were done to prevent this problem.

1. MALT will now only quit if it has not heard a response from the server it is querying for 5 minutes. If we have heard no responses within 5 minutes something is wrong. The unprocessed information will be printed to the MALT.OUT file.

2. The maximum number of requests that MALT can send to a server has been increased from 1000 to 8000.

3. Requests are no longer sent all at once. They are broken up into chunks of 100 and sent at 5 millisecond intervals. This allows MALT to read in some responses that may back up to the point of causing MALT to freeze.

SPECTRUM_5.0rev1.P25

Included in P34, P41, and P48.

SPECTRUM_5.0rev1.P26

Included in P45.

SPECTRUM_5.0rev1.P27

Included in P44.

SPECTRUM_5.0rev1.P28

Included in P34, P41, and P48.

SPECTRUM_5.0rev1.P29

The Event Log for a model that has recent events is showing no events in the log. No message appears stating that there are no events for that time frame. When trying to page up, the mouse pointer turns into an hour glass and then hangs. The event system has a two-tiered filtering system. In the best case all of the filtering is done by the database layer. This is desirable because the database is organized in a manner that makes filtering on model handles and/or time very efficient. If database filter is used exclusively then the exact events you have requested are pulled from the database without having to filter on every event. The second tier uses the CsEventFilter code for filtering. In this case each event is pulled from the database and run through the filter. This continues until one of the following occurs:

- The end of the database is reached.
- The number of events that you requested have been found.
- The search limit is reached (Currently 10,000 events).

So, the model that the EventLog was brought up on had +10,000 events which caused the EventLog to eventually hang.

This has been resolved by building up the event filter object so that the model handle filter node is at the base of the filter hierarchy with the date/time filter nodes.

SPECTRUM_5.0rev1.P30

Unable to assert ORANGE alarm on DLCI_Port w/watcheditor

A threshold watch on a DLCI_port model type will not assert an Orange alarm. It will assert a Yellow or Red but not an Orange.

sets to FRX dev is bringing down network

Models will now reg_watch_change after the first successful read of the model's attributes. When a change does occur, the IH ensures that a write is necessary by checking the current value of the external attribute before writing.

FrameRelay DTE models were disappearing. Added code to check that DLCIs are unique before attempting to shift the modeling.

SPECTRUM_5.0rev1.P31

Included in P34, P41, and P48.

SPECTRUM_5.0rev1.P32

After editing a policy, any attempt to exit the application causes it to hang forever. It appears that this only happens after saving a policy, not when just viewing them.

The issue is that when GET_EXISTING_ALARMS was set to “false” in the .alarmrc and then AlarmNotifier was started, sometimes the user would see alarms come through that had a time stamp of earlier than when AlarmNotifier was started.

To resolve this, when AlarmNotifier makes the initial request to the SpectroSERVER explaining what kind of alarms should be received, if GET_EXISTING_ALARMS is false, a filter specifying ALARM_DATE_TIME > (startup time) is added. With this filter added to the criteria, even if an update on an existing alarm comes in, it will not pass this filter and not be sent to AlarmNotifier. This seems to work as expected. The additional filter is not added if GET_EXISTING_ALARMS is true.

SPECTRUM_5.0rev1.P33

Host_Compaq does not work well with Insight Mgr 4.11.

Compaq has two sets of error logs. One for Insight Manager 4.11 and the other for Insight Manager 3.11. Compaq introduced a new object (attribute) that indicates which set of attributes is being used.

The cause of the problem is that two Event Log Views are being displayed in SPECTRUM. Only one of them is supported by Insight Manager, which is determined by the version you are running. One view will contain no information, which is confusing.

The solution is to create an inference handler to query the new object (external attribute, cpqHeEventLogSupported). Based on the value of this attribute we will display only the correct Event Log view.

The SpectroSERVER is crashing while running ADISC. This is caused by the function is_it_a_SUN de-referencing a zero value. This has been resolved by checking the value before de-referencing.

SPECTRUM_5.0rev1.P34

Included in P41 and P48.

SPECTRUM_5.0rev1.P35

Included in P50.

SPECTRUM_5.0rev1.P36

Included in P47 and P48.

SPECTRUM_5.0rev1.P37

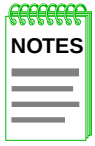
Included in P49.

SPECTRUM_5.0rev1.P38

The server is terminating when 45% of the models get activated. During startup of the SpectroSERVER, with ChipCom ONline/ONcore Models from the CSEU-CCOM product, when the device cannot be contacted, the logic in CsComMntrIH::trig_model_activate will sometimes cause uninitialized memory to be accessed. This, in turn, causes the server to terminate.

SPECTRUM_5.0rev1.P39

On Windows_NT, the SpectroSERVER is crashing after a couple of minutes. This is caused by the fact that we don't properly handle changing the icmp packet size on NT. We change the send size, but we don't account for the larger packet on the return. This has been resolved by changing the code to account for the larger packet size.



1. The following corrected anomaly was included in Patches P40, P41, P42, P43, P44, P45, P47, P48, P49, P50, and P51.

When you run an Online Backup from the VNM icon, the status in the Online Backup window reports that the backup failed. VLAN Manager 1.8 is also installed on the machine. This happens only during a very specific set of events that can come from a vpapi client (VNM, etc.) as follows:

a. Thread A sends a ticket request for the start of a process in the foreground.

b. Thread B sends a ticket request for process is alive.

c. Thread B receives a response on process is alive.

d. Thread A receives a response that the foreground process has died.

In this case, the information returned to Thread A in the actual ticket is incorrect with respect to what was sent in the parm block. This occurs because the exchange id and function id are replaced from Step 3 to Step 4. For example, if Thread A relies upon the exchange id to ensure that it is dealing with a certain message, then the information is incorrect. Since another ticket is not sent back, a deadlock results. The resolution was to change the way some information is stored between client requests.

2. The following corrected anomaly was included in P42, P43, P44, P45, P47, P48, P49, P50, and P51.

The SpectroGRAPH does not connect to a newly started and running SpectroSERVER; however, it does connect after several attempts. The cause is that processd is not sending a reply to the “ticket is ready” message back to the SpectroSERVER with the correct exchange id. This causes the SpectroSERVER to block before it has called accept on its listen socket. The resolution was to include the ticket in the exchange id from the CsVnmMsg, rather than to include it in the reply.

SPECTRUM_5.0rev1.P40

While running SpectroSERVER, when SpectroWATCH executes a script, a small memory leak occurs. This has been resolved by deleting the memory appropriately.

While running SpectroSERVER, a small memory leak occurs in SpectroWATCH. This has been resolved by deleting the memory appropriately.

(Also refer to the Notes on corrected anomalies, above.)

SPECTRUM_5.0rev1.P41

Included in P48.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P42

Creating a model by IP via CLI, creates the device as Pingable. This has been resolved by having it create a device with the correct model type.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P43

After installing P23 the following message is printed out in the VNM.OUT file: status=1 status=1, repeatedly. This was caused by debug output left in the code. This has been removed.

RMONEthProbes are not being created after installing P23. This was caused by code that was trying to filter out SMB10 interfaces. This has been resolved by backing out the code to filter out the SMB10 interfaces.

When using the RMONEthProbe for the FEPIM Port on a 6E233-49 the Monitor Point watches will intermittently fail.

When you removed a probe as a monitor point it used to invalidate the actual probe instances because the hex conversion was used, so it was invalidating the wrong probe. The solution is to use the decimal conversion.

The current RMON code was not searching free slots in EtherStatsTable for more than 50 instances.This will cause a problem

for devices with more than 50 instances in the etherstats table. The solution is to increase the number of slots.

Token Ring Probes are failing as Monitor Points. This is being resolved by adding the correct attributes to allow this to work correctly.

The TR_Mon_Ring_Speed watch is set to read the ifSpeed from the MIB-II Interface Table. The problem occurs in that the OID suffix is set to use the value of the attribute, mp_intefaceOIDref. This attribute is set to 1, and unless changed by an Inference Handler, it will remain 1. This is true, regardless of the interface index of the RMON TR Probe that is used to roll-up values to the Discrete LAN. This is being resolved by modifying the monitor point inference handler and setting the value of mp_intefaceOIDref to the value of the RMONTRProbe's I/F index which is being copied into the Lan.

There is also an error in the Load Calculation. It is defined, using the SpectroWATCH TR_Mon_Util. This is being resolved by correcting the calculation.

The Check Configuration action button in the RMON profile GIB view is not getting implemented for the RMONApp model. It responds with “Attempt to invoke action failed. Error = Not implemented,0x2”. This is being resolved by initiating the process to discover the RMON groups by creating the RMONCreate model and triggering the correct action.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P44

Capturing of host configs on SmartSwRtr fails with no explanation The error states “Capture Failed” with no details.

To reproduce this, go to the configuration screen and perform a capture. It will “think” for a while, and, if you have the “Configuration” screen open off of the device, the “Manager Address” field will change to the last known entry for the IP address and right after, you'll see ECM fail.

The cause was that the attribute type of the ManagerCfgAddress was incorrectly set to text-string where it should be of type IP ADDRESS. The resolution was to correct the setting of the attribute type.

If the customer tries to do a capture on a large number of models of a given model type, sometimes the process will hang and never return.

This has been resolved by optimizing the code to read the template and store it rather than repeatedly reading it for each device.

In ECM, create a new configuration in the configuration window by adding attributes from the list of attributes shown. Now Undo this insert operation by invoking Edit->Undo Insert from the Menu. The attribute(s) inserted are not shown (refreshed) in the list of insertable attributes window after the Undo Insert operation is performed. This has been resolved by refreshing the list of attributes after the Undo Insert operation is performed.

ECM does not display scheduled Jobs. The scheduled event section is blank even though the scheduled jobs show up when displayed via command line. This happens because of the incorrect filter string given by ECM to CsScheduler. This has been resolved by passing the correct filter string.

After saving a configuration, the user is able to complete a load with the safe option. When this configuration is then exported and re-imported, the user is unable to load with the safe option selected. The user is able to load this configuration when the safe load option is not selected. The problem was occurring due to the absence of model handle of the device when the capture operation was performed. This has been resolved by having the model handle of the device retrieved and packed when the configuration information is stored.

The Enterprise Configuration Manager core dumps when the View/ View by Flags option is selected from the menu bar. This has been resolved by having the View by [Attribute/Flags/Sequence] for attributes contained in a configuration grayed out in the View pull down menu when no configurations are selected.

During a capture of multiple attributes, if one or more attributes are not captured, ECM does not treat this as a fatal error and continues. ECM saves the captured configuration, with the captured values for successful attributes, and some default values, for unsuccessful attributes. The result of such a capture operation is "NON_FATAL_ERROR". This does not prevent writing the configuration to database and also shows up as successful, but sends an event to the SS indicating capture “not successful.” This is how this will work now:

The capture detail window indicates status, which could be either success, partly successful, or failed

In all cases, the capture detail window shows the result of each attribute captured, and the configuration is written to the server.

In the event of partial success, an additional event is posted to the SS. A new CsEvFormat file (Event00820012) has been added for this purpose. However no alarm is generated.

A few non-critical problems that show up:

a. When capture reports failure, a pop-up dialog box shows up a message “Error capturing configuration from?" This message can be safely ignored.

b. In the event of partial success of a configuration, the host configuration (in cisco routers) is not captured at all. Once more this is not important, as in any case, one of solutions was to "not write the unsuccessful configurations to the server".

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P45

When opening an Enterprise Alarm Manager, the application retrieves the current list of alarms, but it never updates this list subsequently - it remains static until the alarm manager is restarted. If multiple alarm managers are running, they'll show different lists of alarms. The problem stems from sounds turned on for the Alarm Manager but the sound function not working on the system. The resolution is to add code from Sun to work around the threading problem and to delete the object that does the threading when disabling the sound.

WEB Alarm View sorting on day instead of date. This is because the sorting is done on the date/time string instead of the date/time value. This has been resolved by changing the sort to sort on the date/time value.

AlarmView retains all the event, location, pcause information of a selected alarm after clearing all alarms. This only occurs in the Events and History tabbed pages. This scenario occurs when the event and/or history request has not yet completed and all alarms in the view are removed. When the callback for the event/ history data finally occurs, it fills in the tabbed pages as if the alarm were still displayed. This has been resolved by checking to see if the alarm has cleared before displaying the data.

If a customer has added notes or status to and existing alarm in Alarm Manager, the new changes are not reflected in AlarmWeb view when they happen, although the html files are being updated when the changes happen. The problem is that the pages are being cached in Netscape. This has been resolved by changing the pages so that they are not cached.

Alarm Manager is crashing intermittently and no core file is being generated. A bad alarm node is in the table which causes the sorting code to compare bad data and therefore crash. The bad alarm node is in the table because an update occurred with both an ADD and a MODIFY. The same could occur if a REMOVE and a MODIFY came in on the same update. This has been resolved by making sure the bad data does not get in the table and by adding additional error checking to the sorting code to guard against crashes like this in the future.

When suppressing secondary alarms in AlarmWeb it cores. The "showSecondaryCount" preference is not being registered for in Web Alarm View because it is not used or needed. However, this preference is being checked when filtering out suppressed alarms. The preference is being retrieved and a test is being done to insure it is registered; then it is accessed. Since it was not registered for in Web Alarm View, the value being retrieved is NULL and hence the crash. This has been resolved by checking to see if the preference was registered.

Over several days, Web AlarmView will consume memory until it crashes. This was resolved by keeping a list of the event nodes used in creating the historyDataList. This solution only affects users of the history API.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P46

This patch number was not used.

SPECTRUM_5.0rev1.P47

Included in P48 and P51.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P48

Included in P51.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P49

After running Distributed Find across SpectroSERVER landscapes, the chassis view of the SS6000 and SS9000 boards will not launch in the landscape to which the user is connected. The problem is that when the Distributed Find View is launched, it uses the landscape of the server where the find is being done, instead of the landscape where the SS9000/SS6000 device is actually modeled. The resolution was to the use the model handle of the SS6000 and SS9000 as the landscape handle.

ADISC does not discover SS6000 devices properly. The problem is that all of the boards in the chassis do not know about each other across the backplane. The reason is because of spanning tree. There are two scenarios that exist that determine how spanning tree is implemented across the backplane.

1. The root bridge is one of the boards inside the chassis. Spanning tree sends BPDU's from the switches to the root bridge. If the root bridge resides inside the chassis, then the BPDU's travel from the other boards across the backplane to the root bridge and back. The root bridge knows about all the other boards in the chassis and all the other boards in the chassis know about the root bridge. However, BPDU's are not passed between the other boards. Since BPDU's are not passed between these boards, they "do not know about each other" and their bridge tables are not compared.

   The modeling in this scenario results in all the boards showing a connection to the root bridge in a star.

2. The root bridge resides outside the chassis. Another bridge/switch is connected via the front panel to a board in the chassis. The BPDU's are sent across the backplane from the other boards in the chassis out to the root bridge through the board which is connected to the root bridge via the front panel. The front panel board knows about all the other boards in the chassis because it records the source mac from the BPDU's sent through it across the backplane. However, none of the other boards know about each other.

   The modeling in this scenario is erratic at best.

The solution is to write a new inference handler and attach it to the SS6000 module. It will be responsible for gathering the MAC addresses heard off the SS6000 module's interfaces, as well as the MAC addresses of the modules connected to it via its backplane interfaces. The model state algorithm will also be modified so that a SS6000 module will only go active after it's properly associated with a chassis. However, if a chassis cannot be determined within 2 minutes, then the model state will be forced active, and a yellow alarm will be generated to alert the user. In order for all this to work, all modules that reside in the chassis must be modeled, and their model states must all be ACTIVE, before the GET_ADDRESS_LIST action is sent by Adisc. This will be the case if all the SS6000 modules reside in a single subnet. However, if they don't, then Adisc may have to be run a second time in order for the SS6000 modules to have access to their neighbor's MAC addresses.

NOTE: Connections will only be established between modules if the module's backplane interface has a MIB II ifOperStatus of up, and a dot1dStpPortState status of learning, forwarding or listening.

NOTE: If the customer has done manual modeling and placed S6000 boards from the same chassis into different IPClass, LAN or Network containers then the modeling will still be unpredictable.

The problem is that the serial number for SS 2200's cannot be read from the GIB views. The resolution is to attach an inference handler that copies the serial number from the device to the internal serial number attribute to the hub model.

The Chassis view for SS6000 devices has an area on the right side of the view for chassis power supply and fan information. Currently no information shows in these boxes. The appropriate methods need to be updated to include appropriate instance information during the reads.

The view of the SmartSwitch 6000 backplane does not show the backplane ports (b1, b2, b3, b4, b5) correctly. The ports are not shown in numerical order; at times they show up in random order. The problem is an array indexing problem. A new default type was created, and all interfaces read from the OID table are automatically added to the list, effectively putting the HostPort interface at the end of the list. This takes care of the array indexing issue for the SS6000 devices.

After moving a card in the 9000 chassis to another chassis the new inb and chassis are not being created.

When a 9000 (MMACPlus) board is removed from the chassis and then reinserted, its System Up Time is reset to zero. Spectrum detects this and attempts to reconfigure. If the board was moved from one slot in a chassis to a different slot in the same chassis, this is correctly identified, and the DevTop and Chassis Device views etc. are repainted with the board in the new slot location.

However, if a board is moved from one chassis to a different chassis, Spectrum is not detecting this. If a board is moved from slot 5 in chassis 1 to slot 10 in chassis 2, Spectrum incorrectly thinks the board is now in slot 10 (good) of chassis 1. It doesn't create a model for chassis 2, or the INB of chassis 2, etc.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P50

The 3Com SuperStack II FMS Token Ring Hub has extra ports supported in its MIB called the Router, RingIn, RingOut and Cascade ports. These are in a different table from the standard ports. Support is required for these extra ports so that they can be displayed properly in the Device and DevTop Chassis Views. The resolution was to add the GIB files and database changes that were required.

AutoDiscovery is not fully supported in the current module. The 3Com FMS Token Ring Hub has extra ports in addition to its normal repeater ports. There are 4 types of ports of which there can normally be up to one of each on a stackable hub unit. These are the Router, RingIn, RingOut and Cascade ports. Currently the Router port is the only one which can contain MAC Address information. This port is currently unsupported in AutoDiscovery. The resolution was to create the necessary inference handler to support the Router port.

When AutoDiscovery runs on the 3Com SuperStack II from the Universe view a Hub3ComSSTR_A is properly created. There are a few evident problems that occur.

1. The 3ComTRChassisApp is placed in a Network container. There is no devtop for this model to show connections.

2. Also during the discovery MAC addresses are found and connected to the device. These are incorrectly modeled as Physical_Addr. The Hub3ComSSTR_A should get placed in an 802_5 LAN container.

The resolution is that a new inference handler has been written to handle the AutoDiscovery issue and the database attributes have been modified so that the device will be placed in the correct container.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

SPECTRUM_5.0rev1.P51

After installing P41. Problems occurred with the HubCat5000 models. Device/Chassis view is blank. DevTop/Chassis menu option is grayed out. DevTop/Interface view gives `Device not configured` error. The problem is that during the board creation phase, CsIHChasMgr attempts to read boardType_Map from the CATStackApp model type. It uses CsULMapper::buildMap to create a map, and buildmap does not recognize Enum, just ENUM. The resolution is to change the attribute from Enum to ENUM.

After setting the db flag for the following external attributes: ifType, ifSpeed, and ifPhysAddress, the DEVTOP view for Cisco Routers become unusable. The Inference Handler which reads these attributes to create the port models uses the default read mode of "Most Available". Setting the database flags on these 3 attributes causes the read to get the attribute values from the database. This causes the read to return an empty value for those attributes and the ports never get created. Only with "Read Most Current" will the read attempt to get the values from the device. The resolution to the problem is to change the Inference Handler to use the "Read Most Current" mode which causes the read to get the attribute values from the device even if the attributes have their db flag set.

The SpectroSERVER, ArchMgr and LocServer processes all grow in memory usage when running in the distributed environment. This may be caused by bringing up two SpectroGRAPHs on the same display. The resolution is to have the map manager (which is a component in the SpectroSERVER, LocServer, and ArchMgr) stop processing map updates for Z minutes once a map storm is detected. The criteria for detecting a map storm is to receive X amount of map updates in Y seconds. X, Y, and Z are configurable.

Purify detected a memory leak in CSIHLostAndFound. The resolution is remove the leak as needed.

BRGMAP hangs and is using 95%+ cpu. For each port on each bridge in the LAN, there is a method that determines potential connections to other ports on other bridges in the LAN using two techniques. The first technique creates a "potential" connection if both ports' SAT tables know about each other. The second technique creates a "potential" connection if (although none of Bridge B's ports SAT tables know about Bridge A) Bridge A's Port 1 SAT table knows about Bridge B and at least one of Bridge B's Ports hears the same devices that Bridge A's ports (other than Port 1) hear. Apparently, this second technique was added when technique 1 did not work with a certain Cisco device even though the Cisco device was connected. The resolution to the current MR is to NOT run the second technique if the bridge is in a SS6000 chassis.

The problem of not being able to create a LAN model off a SONET interface (by manual configuration) has been corrected. The resolution was to create an attribute off the VNM model called IfTypeList and to allow un-numbered interfaces be processed normally once the new model was configured.

In the CSIIfPort Model Information view, the Banner's Interface Type label shows ??? instead of the correct Enumeration. This has been resolved by modifying the GIB file to display the entire Interface Type.

In SPECTRUM 5.0, we introduced a new service called "Automatic Contact Lost Model Destruction" which will destroy any device model which has been down (i.e. CONTACT_STATUS is LOST) for longer than a specified amount of time. This time interval can be modified in the Fault Isolation model's Model Information View accessed via the VNM's Performance View. The problem is that the GIB field for the time attribute is of an incorrect type. The GIB field is for an unsigned integer, but the attribute is of type Time Ticks. This causes the following error to be displayed when trying to modify the attribute' s value in the GIB: "Update failed for the following attributes: Attribute 0x11fa9 - Attribute wrong type, 0x2000002". This has been resolved by changing the type to Time Ticks.

In the Model Information View for Lost & Found, there is a button for next model destruction time. The button lists the day, date, and time of the next automatic model destruction. In 5.0rev1 with CS1 and MMS1 installed, the date isn't displayed correctly. The day of the month is missing. This has been resolved by adding the day of the month.

The Interface Description Map on the HubCat models cannot be resized. This has been resolved by increasing the size of the GIB when it is displayed.

The values in SW_Link performance view all say "failed." The performance view for the monitor point, which is an ATMIfPort, has values of "failed" as well. The attributes being used for those fields -- InLoad, OutLoad, InCellRate, OutCellRate, and ErrorCellRate, are all red-boxed in the attribute browser. Since the SW_Link can use different types of models as its monitor point, an additional string field was added to the inference handler to send along with the action. The port that picks up the action will compare with the string to find what attribute it needs to read, and then will supply the attribute ID for the correct corresponding attributes (i.e. if it is an ATMIfPort, and it receives the string "In_Load" it will read its appropriate In_Load statistic, whose ID will be supplied by its own IH). This is necessary because the SW_Link code has SwitchApp statistics hard-coded, and obviously you can't read the SwitchApp model's statistics on an ATMIfPort.

When modeling a cisco router with ISDN interfaces, the interfaces are constantly going up and down. This is resulting in the device sending a trap for each occurrence. When the trap is received, SPECTRUM generates a red alarm for each port that goes down. For the ISDN interfaces this is a normal state and the ports should not show an alarm status. The inference handler that is managing the incoming trap has been changed to create just an event, in addition to the all or nothing option now available. To do this another attribute (AlarmOnLinkDnTrap) has been introduced. This attribute allows or disallows the alarm being created after the event is created. The default state of an ISDN interface, either modeled as a Serial_IF_Port or as a new ISDN port, is that events are logged on port linkUp and linkDown but alarms are not generated.

The Cisco Route Switch Module, RSM, is a board that installs into a Catalyst hub. It has no ports out of its front panel and the only connection which it has to the backplane is a virtual connection. This board is modeled separately with the Rtr_Cisco MM. After modeling an RSM and navigating to the DevTop view the only thing that is displayed is the Rtr_Cisco icon in the upper right hand corner. What is expected is a cable walk as well. By default in version 5.0rev1, create sub-interfaces are set to false. For the cable walk to appear in the DevTop view you must change the "Create Sub-Interfaces?" selection

from false to true and then reconfigure. This has been resolved by changing the default value for Create_Sub_Interfaces to TRUE.

WA_Link monitor points are lost if one of the routers on either side is rebooted. The problem is that the intelligence which finds and maintains the monitor point for the container (in this case a WA_Link) has not been designed to handle the case where all potential monitor points which the container could use go down, i.e Contact_Status goes LOST. When Contact_Status goes LOST, the intelligence clears out all monitor point information for the container and should start watching the CONTACT_STATUS of the currently selected monitor point. The problem is that the setup of the watch is triggered by a write to the LAN_SELECT_MP attribute for which we currently only trigger by changes in the attribute, i.e. a new monitor point is selected. A situation can arise where the same monitor point is written to the attribute, thus causing the trigger to not go off. When this happens, we are not watching any potential monitor point to see when it may regain contact.

CiscoView will not launch since we do not pass the community name parameter. This has been resolved by adding the community name parameter.

The Performance view of Cisco Rtr HSSI interface is not showing Error_Rate, Discard_Rate, or Packet_Rate. The problem is that the value that is being stored into the attribute "Total_Packets" is larger than a 32 bit Integer. So the overflow on the attribute crashes the calculation which causes a failure to be displayed in the Serial_IF_Port Performance View. This has been resolved by changing the attribute "Total_Packets" from an integer to a counter.

Customer has Cisco Routers in their network that are utilizing Un Number IP. When the customer Runs an ADISC, Model By IP (with discover connection), or even a discover LAN, WA_Links are not being created on the Serial Interfaces. This has been resolved by creating the WA_Link regardless of whether the nexthop device was modeled or not.

Annotated text moves across the SpectroGRAPH view to the right (approx 1 to 2 pixels) each time a model is created or destroyed. Zooming the annotations causes X,Y coordinates to be changed, which causes this problem.

Open the Device Chassis View of a 6E122-26, then select the field "Physical" of a board and open the Icon Subview Port Display Form. You are able to switch from Operational Status to Duplex Mode but you cannot switch back to Operational Mode again. The same behavior exists when you switch to Speed and then back to Operational Mode. This has been resolved by allowing the user to switch back to Operational Mode.

After deriving a model type from Rtr_Cisco, adding some attributes, and creating an instance of the new model type, it was found that the intelligence attached to the Rtr_Cisco model (e.g. Action Buttons in the Configuration-> Net/Host Configuration View) were non-functional (returning the error Error = Not Implemented,0x2). This has been resolved by fixing the if conditions in the MI file for all the intel on Cisco Routers.

After doing an in-place migration of 4.0rev3 to 5.0rev0, you are unable to see statistics dating prior to the 5.0rev0 installation. The events converted fine and they could be seen dating prior to the 5.0rev0 installation. This is caused by an error in the Statistics migration component of ddm_load. Because of the format of the old 4.0rev3 saves, we must use heuristics to try to match the data from the various save files. In particular, we read through the DDMSAVE_stat_attr_data file to get model/attr handle combinations and their associated data, then we read in the DDMSAVE_stat_time_data file, looking for a match on the model/attr handle to read the compressed time nodes that correspond to the data. The error lies the fact that if for some reason there are no compressed time nodes for a model/attr, then we read past all of the time nodes looking for a match, and we never reset the file pointer. Also, we never read another time node to try to match it with the subsequent model/attr handle data nodes. This has been resolved by changing ddm_load to allow for loading of the rest of the time nodes.

SpectroSERVER cores after the copyright screen appears. This was caused when the VGE interface was installed; the Solaris kernel stat structure added 64 other interfaces. There is a hard-coded limit of 16 interfaces in SPECTRUM. This has been resolved by implementing a check in the code that determines how many interfaces there are so it won't exceed the limit.

After starting the SpectroSERVER and SpectroGRAPH and setting up a Background Discovery, if you restart the SERVER for any reason, the Background Discovery will no longer run at the previously

scheduled intervals. You have to reset the Background Discovery in order for it to start running again. This has been resolved by changing Background Discovery to only reset every time the SpectroSERVER is shut down.

Customer states that, under 4.0Rev3, although the SNMP get packet that was issued on behalf of an active GIB view did exceed the max length that his agent was capable of handling, the DCM did successfully process all of the data:

1. Through an arbitration type process the DCM removed attributes that were roughly equal to 25% of the total packet size during each iteration, until it finally sent a packet that was small enough to be processed by the Liebert Agent.
2. The remaining attributes were then packed into subsequent packets and sent to the agent for processing.
3. The successful packets were reused by the DCM, rather than having to repeat the arbitration process for each refresh cycle of the GIB.

When moving to 5.0 the customer has reported that the way in which the DCM processes packets which are too large for the agent has changed markedly:

1. The arbitration process uses a ~10% reduction factor in each iteration.
2. The remaining attributes are dropped and not resent.

This has been resolved by restoring the old behavior.

Support has been added for the Catalyst wsx5030 board.

A memory leak occurs on every poll of a port's Internal_Link_Status when LivePipes is turned on. The default polling interval is 1 minute for each port in the database with Live Pipes enabled, which can become a severe memory issue for customers who use LivePipes.

Bringing up the I/O Statistics View from the VNM Performance View causes the following errors to appear in the VNM.OUT:

Cs_get_diskio: kstat_read: No such device or address

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Cs_get_diskio: kstat_read: No such device or address

Solaris 2.6 and beyond allows finer granularity of performance statistics on disks. Two things can happen, both of which are unnecessary. Items can be subdivided into partitions, and the software can try to collect information on NFS mounted directories. This does not stop the information from being collected; it just places a message into the VNM.OUT every 10 seconds while the I/O Statistics GIB is open. This has been resolved by checking to make sure that the disk is an actual disk and not a partition or NFS mount point.

Devices are being destroyed because the device has been down (Contact_Status is Lost) for longer than the specified destruction delay of 604800 seconds. This feature is disabled for the customer and the models are still being destroyed. During a VNM restart, the intelligence checks to see if the model has its CONTACT_STATUS set to LOST. If so, we register a timer to start timing the amount of time the model has been lost without first checking to see if this "automatic contact lost model destruction" service is enabled. This has been resolved by adding the check.

In SPECTRUM 5.0 and beyond, we do not examine the state of the connected ports during a WA_Link's Fault Isolation process. We simply look at the status of the connected devices. If both devices are up, then the WA_Link will be GREEN. This causes problems when the VNM has a redundant connection to the remote device. When the wide area connection goes down, the VNM will have a second way to contact the remote device, thus we won't lose contact with it. This results in no alarms even though the WA_Link went down. In 4.0rev3, WA_Links used to monitor the status of the connected ports and generate an ORANGE "Probable Link Failure" alarm when one of the ports went down. This patch adds this type of functionality back in for WA_Links.

When modeling a HubCat 5500 device, the SpectoGRAPH crashes when opening the Configuration View. This was resolved by modifying the GIB view to prevent the crash.

On startup, the SpectroSERVER randomizes the first poll for all devices over a fixed ten minute period. While this works well to distribute the load when polling and logging are at the Spectrum defaults, it does not work well on very large databases where the polling interval has been extended beyond ten minutes. This results in a very cyclic SpectroSERVER workload, and decreases overall

capacity and response time. A .vnmrc entry can be added to allow the randomization period to be set. This entry is: mdl_act_dist_factor.

The Archive Manager is crashing and producing a core file. This is caused by a double-delete occurring when running a Data Export when the user no longer has permission to access a model. This has been resolved by deleting the memory correctly.

ArchMgr uses up to 100% of the CPU and will continue to do so until the process is killed. It appears that we have found a hole in the 5.0rev1 CsMgrClientList, where the client_list member can schedule during list manipulation, which can allow the list to become corrupt. This can then cause core dumps or 100% CPU usage due to an infinite loop. This has been resolved by preventing the client_list member from scheduling during list manipulation.

Going into the devtop of a BRtrCSIEMM_E6 causes the SpectroGRAPH to core dump. This was caused when changes were made to correct swbug011329; not all files needed to fully complete this change were included in P34.

An EPI agent can send an unsolicited message to Spectrum in the form of an attribute change. There is currently no means for logging when these attribute changes occur. A new attribute called Log_Attr_Changes of type Integer has been added to the EpiPif model type. This attribute will maintain 3 valid values. 0 = no logging, 1 = log all changes, and 2 = log only when the value of the attribute changes.

Purify reports a memory leak in adisc. The memory allocated for conn_DTEs should be freed.

Recently while working on the PatrolView integration, a problem was discovered relating to icon arrangement. Several of the PatrolView model types were derived from the Composite model type. Unfortunately this resulted in some incorrect fault isolation behavior. After removing Composite as a base model type, it was found in several views that the PatrolView icons were not displayed correctly. By removing Composite, which does the arranging, CsIHVIB was no longer attached. Since PatrolView is a 3rd Party product, there is no access to this core IH. To resolve this, a new model type has been created from which 3rd Party model types can be derived. CsIHVIB can then be attached to this new model type so that the 3rd party products can take advantage of the functionality.

For epapi, the port to NT introduced the "sigaction_thread()" function, which runs on its own native NT thread upon call to EPI_fcntl(). This function is implemented to always synchronize with the Cs_EPI_pause() method, to be called from the application thread. Unfortunately, this implementation changes the EPI interface, now requiring that Cs_EPI_pause() be called in order for ANY IO notification to occur. There is unnecessary code introduced by the port which actually causes a segv for large messages. This has been resolved by removing the EPIAcceptEvent from sigaction_thread and Cs_EPI_pause. This will allow true async IO notification from epi. This has also been resolved by removing the unnecessary code that introduced the segv for large messages.

Support has been added for the Catalyst wsx5201r and wsx5225r boards.

After upgrading from 4.0rev3 to 5.0rev0, you can no longer view or convert 40rev3 statistics with the 5.0rev0 version of ddm_load. After doing the upgrade, if you use ddm_load to reload the 4.0rev3 StatDb from a ddmsavefile then use the SDE application, the common attributes only show the "0x0" for available data. Using the Reports application you will see an available range for data prior to the installation of 5.0rev0, yet when you run a statistical report for a router the report indicates "Completed Successfully - No Records Found". The problem is that the 4.0rev3 DDM saves do not include Attribute names or types. Because of this, we don't create the AttrDict records in the new DDM database, as part of the migration load. This has been resolved by writing a tool that can be run after migrating from 4.rev3 to 5.0rev1, that will update the DDM database with all the relevant Attribute data from a running SpectroSERVER.

If an application sets the instance name member of the CsDataList object, the memory never gets reclaimed. This results in a memory leak. This has been resolved by writing a destructor to reclaim the memory.

Connection Manager in the Alarm Manager reports a DOWN connection for the View Service, incorrectly. This inhibits the ability to navigate to device from the Alarm Manager when need be, because the Connection Manager is reporting a DOWN connection. The resolution to this problem does not change the view service advertisement when a SpectroGRAPH is brought down with one already running, but prevents map storms from freezing up SPECTRUM's processes.

(Also refer to the Notes on corrected anomalies, on Page 5-14.)

Problems Resolutions Included in CS2/MMS2

CS2/MMS2 provided resolutions for the following problems.

1. The UpTime attribute in SpectroWATCH formulas has been changed to type **TimeTicks** to avoid wrap-around errors and ensure the accuracy of certain load computations.
2. A new relation now exists for FddiConcentrators to prevent model destruction in the Lost & Found view.
3. processd now auto-restarts your SSAPI applications.
4. The date in the sw_alrm_script is now presented in month/day format.
5. AutoDiscovery now puts WA_Links on a Frame Relay interface, as it did in 4.0rev3/MMS3.
6. The CLI Seek command no longer causes the SpectroSERVER to core dump.
7. An option has been provided giving the SPECTRUM Administrator the ability to allow read-only users to acknowledge alarms.
8. On Solaris 2.7, SpectroGRAPH no longer crashes during Find and in Attribute Browser.
9. The CsDateTime class was modified to ensure that date and time references are in the language and format suitable for your geographic locale.
10. The user Editor now sends *all* common attributes to the server, not just those attributes that are visible to the user.
11. Security string inheritance now propagates correctly, even when some of the intermediate security strings are empty.
12. Watches no longer fail reading some internal attributes.

13. Pingable models now receive Alerts generated from SNMP Traps.
14. Final changes have been made to allow printing of more than one model per page.
15. SPECTRUM Data Export scheduling no longer fails with the message: `Not authorized to use cron`.
16. Cisco 2501s and 7500s modeled as Rtr_Cisco are no longer missing applications and lacking necessary containers.
17. CLI no longer fails to connect from SpectroWatch script.
18. The printer dialog box for the Print-View on NT systems now displays, showing the default printer selected.
19. There is no longer a need to manually update the vendor ID list and vendor Name list before running the Event Configuration Editor.
20. Model types and models are now visible in the Reports UI Statistics and Events pick lists.
21. Components in SPECTRUM 5.0rev1 are no longer being deselected during installation and causing **Install** to fail in the link phase. Using **newtar** instead of **tar** now ensures that **Install** retrieves all components.
22. In the Event view, clicking on the Filter dialog box **Cancel** button now properly restores the last applied model type list.
23. Two attribute IDs that had previously been swapped in the GnSNMPDev Redundancy and Model Reconfiguration Options GIB now accurately match the corresponding field label.
24. In a distributed environment, the Salt tool now shows the model or landscape name for models in remote landscapes.
25. Users can now control at the Gen_IF_Port level whether an interface will alarm in response to a linkDown trap.
26. Patch installation on NT no longer fails with a syntax error message.

Patches Issued Since the CS2/MMS2 Release

SPECTRUM_5.0rev1.P52

The problem was that a pointer in the SM-3CM1006 product was not being checked and therefore was being dereferenced. If this occurred during an AutoDiscovery the SpectroSERVER would core dump.

The resolution was to put a check on attrval lists that were not being verified before they were being used.

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The problem was a security issue when the SPECTRUM directories have "write" privileges granted to the group "other". An unauthorized user could potentially go in and replace files in the SPECTRUM directories or place corrupt files/executables that could cause serious damage to a SPECTRUM machine or disk. Only authorized users should have "write" privileges to the SPECTRUM directories and users belonging to the group "other" should not have these privileges.

This behavior, although undesirable, is working as designed presently. The tar command is supposed to behave differently if run as the "root" user and because SPECTRUM is normally installed by the "root" user, "tar" is also running as root.

The resolution was to change newtar to allow a -u flag, which will honor umask even if run as the "root" user. This will mean SPECTRUM can extract the files as the user would like according to their umask setting. However, this will only effect the products/files that you are currently installing. Any files that are currently set to have write privileges to the group "other" will have to be changed manually.

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SPECTRUM_5.0rev1.P53

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P54

Included in SPECTRUM_5.0rev1.P101

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The problem is with the DLCI_port model type. In SPECTRUM, the port would toggle between GREEN and RED (up and down) after a DLCI connection was made then broken on a router supporting DLCI. There is an attribute called "dlcistate" which is one of 11 internal/ external attributes for the DLCI_port model type. In one particular case, when the connection between two DLCI ports broken, nine out of the 11 external reads fail on the near end router -- dlciState is one of them. These failed attributes get put into an unsupported external attributes list for that model, and write 0 values to the corresponding internal attributes. Then these failed external attributes are NEVER read again. That's why after the disconnection, the internal attribute dlciState was not consistent with the external attributes. However due to another code error, if the read of dlciState was within 10 seconds from a previous read, the old value of 2 was returned. That's why the dlciState toggling between 0 and 2 (up and down).

The resolution is to use the first three external reads after a disconnection to build the unsupported external attributes list. An attribute will be added to the list only if it has failed on for all three reads. This will prevent attributes from being added to this list prematurely and NEVER read again.

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SPECTRUM_5.0rev1.P55

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P56

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P57

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P58

The problem was that the Enterprise Configuration Manager needed long model name support for both configurations and templates in ECM. The maximum length for configurations or templates was 16 characters. Currently, the only long model name support was for devices that were created in SPECTRUM (modeled) and viewing them through ECM.

The resolution was corrected by allowing the user to enter a template/configuration name greater than 16 characters but less than 1024 characters as given by 'modelNameDisplayLength' setting in the resource file. A 24 character width name to be viewed in the main window and a 48 character width name to be viewed in the template/configuration window is also allowed. If the name was greater than any of the values in the respective windows, a message box appeared listing the name of the template/configuration.

Although there is a limitation to the viewing width, internally ECM stores a configuration/template with a maximum length of 1024 characters. This can be verified by setting the CLIMNAMEWIDTH environment variable in CLI.

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The problem is trying to capture a host config with an ECM template containing only the host config for a HubCAT1400 fails. The error message received is: "Capture Failed" and clicking on the Details button shows the message, "Cannot find error code in ECM_ERROR file: 0x200000c". Also, closing the Details button and then clicking on it again produces a core dump of the ECM. The following is a customer quoted explanation: "This hardware (the c1400, and its smaller brother the c1100), are an old design, that Cisco inherited when they brought Crescendo many years ago. For some reason, these devices store the config on module 3. Module 3 is not and actual module, it is the processor inside the device. The only insertable modules are the FDDI/CDDI port modules which can go in slots 1 & 2. You should also be aware that the SwCat1200 operates in the same

way as the c1400/c1100 and therefore you are also unable to store configs via the current version of ECM."

The resolution was to incorporate a check to find out if the model type against which ECM was run was HubCat1400 or SwCat1200. If it was then the module value setting in CAT_TFTP_MODULE is set to 3 else the module setting remains at 1. For HubCat1400/SwCat1200 devices, host configuration operations can only be performed using ECM. Scmbg cannot be used. For all other Catalyst devices, the model handle specified should be that of the corresponding CatStack app, when using Scmbg.

--

The problem is with ECM. If a scheduled verify of a host configuration fails, the failure causing line(s) in the host configuration cannot be identified in the ecmbg.log. There is an incorrect attribute preventing the log functionality from working correctly. Also, the ecmbg.log is difficult to read and understand.

The resolution is to correct the attribute name preventing log functionality. Also, the ecmbg.log formatting is improved.

--

The problem is trying to load an ECM host configuration to more than one model will fail with the error message: "Not Loaded" with no explanation. The problem arises due to the way ECM handles results, in the case of multi load/captures.

The resolution is to change the function of the host configuration loading so that it will load even when there are no attributes to load.

--

The ECM has been altered so that ECM will not read the community string of the user. But the SPECTRUM security underneath will prevent a user from seeing the devices in other domains and hence prevent users from attempting to load/capture/verify on these devices. The user must have write access to the devices in his domain for ECM host config operations to succeed.

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SPECTRUM_5.0rev1.P59

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P60

The problem is when using DLS1000 and modeling Rtr_Cisco the AppnSessApp has a view called APPN Session Information View. This view has a number of columns. There are 2 problems with it.

a. The rows of columns are not separated enough. This causes the top of the titles in 2nd and 3rd rows to be cut off.

b. The ProCorrID is should be displayed as hex instead of text. When the information is displayed as text the data is meaningless.

The resolution is modify the column spacing and the information display.

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SPECTRUM_5.0rev1.P61

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P62

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P63

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P64

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P65

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P66

The problem was that two icons for the 3Com Link Switch 3000 (Hub3ComLS3000) model type were showing different looking DevTop views. The Topology View icon and the Off Page Reference (OPR) icons were the two icons in question.

The resolution was to have the OPR icon DevTop view match that of the Topology View icon.

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SPECTRUM_5.0rev1.P67

The problem was there was no support for traps of the 3Com FMS Token Ring device Management Module.

The resolution was to add trap support for the Management Module.

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The problem was that only one Cascade port was showing for the 3Com FMS Token Ring device Management Module. Two should have been shown in SPECTRUM.

The resolution was to add support for the second Cascade port to show in SPECTRUM.

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SPECTRUM_5.0rev1.P68

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P69

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P70

The problem was that printing to a color printer with graphical reports (.GRF type) just outputs the ascii postscript commands. This seems to be directly related to changed made by

Spectrum_5.0rev1.P46 against CS1/MMS1. There is no problem with printing to a printer that does not support color printing.

The resolution was to write a script which installs gs5.50 (an executable called ghostscript). It takes the GRF filename, device type, gs5.50 install location as settable parameters and generates the appropriate print files using ghostscript. This file can be printed using ntprint or a third party public domain software called PrintFile which lets you select the printer through the user interface. The print files generated using this script work on the HP 670C color deskjet printer among others.

**Note: This resolution is supported for the Windows_NT platform only.

**Note: Please follow these instructions after creating reports, <reportname>.TAB and <reportname>.GRF to invoke the fixes included in the resolution:

1. "cd $SPECROOT/bin" check for the existence of gs5.50 directory

2. "cd $SPECROOT/SG"

3. edit the file PrintGRF.bat and set DeviceType type.

    a. scroll down to the line "set DeviceType=djet500"

    b. replace "djet500" with the device/printer you

    prefer.

4. "PrintGRF <reportname>.GRF". This command should be executed from a SpectroSHELL window and should show a print dialog which lets the user select the appropriate printer.

--

The problem was a customer wanted the ability to change the font size in .gif and html report output files independent of the .gif size in Graphical Report (.GRF).

The resolution was to make the font sizes in various areas were made to be modifiable/user defined:

Spectrum Reports now supports variable font types and sizes for:

(1) Header section of the GRF file display

(2) labels on both the axis

(3) header section of the html files generated along with the gif files.

Corresponding to each of these the new variables the file and valid values are given below.

(1) in $SPECROOT/report.config/default.PRF (default preferences files)

USER_DEFINED_FONTS,

can be set to 0 (user would like to Graphrpt to use its defaults)

1 (user would like his setting to override Graphrpt defaults)

HEADER_FONT_TYPE

can be set to 0 (font type is NORMAL)

1 (bold)

2 (italic)

HEADER_FONT_SIZE

value is in points (pt). 12 pt corresponds to normal size.

AXIS_LABEL_FONT_TYPE

same as in HEADER_FONT_TYPE

AXIS_LABEL_FONT_SIZE

same as in HEADER_FONT_SIZE

(2) in $SPECROOT/report.config/default.rptrc

DEFAULT_FONT_TYPE

DEFAULT_FONT_SIZE

these variables' values will be used as they have no checks for validity. Examples of DEFAULT_FONT_TYPE values include "Times", "Courier New", "Symbol" etc. and DEFAULT_FONT_SIZE values include 2,3,4 etc.

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SPECTRUM_5.0rev1.P71

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P72

The problem was that AutoDiscovery and Modeling by IP allowed duplicate models without warning for the following model types: 2E43_51 and 2H23_50R or any other device covered under SM-CSI1068 or SM-CSI1080. As it turned out AutoDiscovery WAS finding the already created model, but then it checked to if the model had the Dev_Model_Handle attribute (meaning the model was a component of some other model). If it has the attribute, it reads the attribute and assumes that model is the already existing model. For some reason many of the model types exhibiting this problem HAVE the Dev_Model_Handle attribute. They shouldn't. It's value was 0x0 for these models, thus when AutoDiscovery read it, it gets 0x0 back, and model appears not to be found.

The resolution was setting the Dev_Model_Handle for the 2H23_50R and 2H33_37R model types to be themselves. This caused AutoDiscovery to not allow multiple modeling of the same device.

--

The problem was that the Device Chassis View of the 2E253-49 was not comprehensible. All the ports were squeezed together making all the information in them useless. The 2E253_29R was using the wrong iib file, making it look like a 6000 series management module for the Device Chassis View.

The resolution was to correct the Iib file so that the Device Chassis View is understandable and uncrowded.

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The problem was that a "Device Not Configured" error message appears when attempting to get to the DevTop View of a FddiMAC model of model type's 2E42-27 or 2E42-27R with HSIM-F6's installed. This problem was found particularly with the following install configuration: 4.0rev3, MS1, RS3, MS2 and MS3, CS1/MMS1. Also, no FDDIPort's (A-Type and B-Type) were showing in the DevTop View of the FddiMAC models. Only Rptr Port models were present.

This problem was two-fold:

There was an attribute, PORTS_STATE that did not exist for any SS2000 model type that was NOT derived from MicroLANModule (most 2000 devices). The intelligence tried to read this attribute before it got through any of the application association processes. When the attribute read failed (on a device that didn't have the attribute), the association process was bypassed altogether, and the model state never reached the active state.

The second issue was similar. The SS2000 devices in question did not have a DEVICE_MDL_HANDLE attribute (again, because they were not derived from MicroLANModule). The appropriate IH tried to register for a change on this attribute, but when it saw the attribute didn't exist, the error code was set to FAILURE and the IH never got attached to the model. As a result, again, the proper model states were never written to as CS_MODEL_ACTIVE.

The resolution to the first part was to create a new PORTS_STATE attribute at the SS8H level so that all SS2000 devices picked up this attribute. The configuration process could then continue as normal.

The second issue was solved by not setting the error condition for the IH to FAILURE when it saw the DEVICE_MDL_HANDLE attribute did not exist.

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SPECTRUM_5.0rev1.P73

Included in SPECTRUM_5.0rev1.P101

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The problem was the ctUPSApp model was not appearing in the MicroMMAC's Application View even though a UPS was physically connected to the com 1 port of a MicroMMAC. The ctUpsID oid had to be set through mibtools before the model would appear. Until this application appears, a user cannot set the appropriate "UPS Model" in the Performance View.

The resolution was to add CtUPSMib as a base model type. If it fails to get read during the creation process of the ctUPSApp model the SPECTRUM will try to write to it. This action would then cause the CtUPSApp to be activated.

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The problem is when Cabletron EMME, MicroMMAC and SEHi devices reboot the security configuration is deleted and must be manually reconfigured on the box. The customer would like the ability to use ECM to save and restore port locking information on these devices. These devices use RptrRev4Mib and they do not include the security attributes available in the RptrRev4SecMib. The RprtrRev4SecMib cannot simply replace the RptrRev4Mib for these devices because of firmware issues.

The resolution was to add the security attributes from the RprtrRev4SecMib via a new model type: RptrRev4SecFrag. The attributes created under RptrRev4SecFrag are:

rptrSrcAddrListId

rptrSrcAddrAddressList

rptrSrcAddrSrcTableEntryId

rptrSrcAddrSrcTableEntryPort

rptrSrcAddrSrcTableEntryPortGroup

rptrSrcAddrMgmtSrcAgeInterval

rptrSrcAddrMgmtPortLock

rptrSrcAddrMgmtActiveUsers

rptrSrcAddrMgmtHashType

rptrSecurityLockState

rptrSecuritySecureState

rptrSecurityLearnState

rptrSecurityLearnMode

rptrPortGrpSrcAddrLockGrpId

rptrPortGrpSrcAddrLock

rptrPortGrpSASecuritySecureState

rptrPortGrpSASecurityLearnState

rptrPortGrpSASecurityLearnMode

rptrPortSecurityPortGrpId

rptrPortSecurityPortId

rptrPortSecurityLockStatus

rptrPortSecurityLockAddAddress

rptrPortSecurityLockDelAddress

rptrPortSecurityDisableOnViolation

rptrPortSecurityFullSecEnabled

rptrPortSecuritySecureState

rptrPortSecurityForceNonSecure

rptrPortSecurityLearnState

rptrPortSecurityLearnMode

rptrPortSecurityListPortGrpId

rptrPortSecurityListPortId

rptrPortSecurityListIndex

rptrPortSecurityListAddress

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SPECTRUM_5.0rev1.P74

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P75

Included in SPECTRUM_5.0rev1.P80

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The problem was there was an intermittent Segmentation Fault with the SPECTRUM AlarmNotifier. The environment included 17 distributed servers and is running the AlarmNotifier from a "MOM"

server to gather all alarms and distribute them to the trouble ticketing software from there.

The resolution was to identify and correct the code that was causing the violation. The fix was tested at the customer site and the Segmentation Fault did not occur anymore.

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SPECTRUM_5.0rev1.P76

The problem was that SPECTRUM was not processing traps correctly for UpsApc92xx. The Event were being documented as "Unknown alerts received from device".

The resolution was to modify the directories so that the EventDisp and AlertMap files reside in the correct location and traps can be processed correctly.

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The problem was that the powernet mib supporting UpsAPC92xx supports more traps than were supported by the AlertMap file in the CsVendor/American_Power/UpsAPC92xx file.

The resolution was to add the missing traps to the AlertMap file.

Also, the directory /CsVendor/American_Power/ has been replaced by CsVendor/Cabletron_Syst/ all components should match.

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SPECTRUM_5.0rev1.P77

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P78

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P79

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P80

The problem was there was some difficulty running AR System Gateway 5.0rev1 with Remedy's new 4.0 version. Several issues were addressed and the particulars are written below.

For NT Only. The version of runmacro.exe and rcmn40.dll shipped with this product is 4.0.

For Solaris only. The automatic Trouble Ticket Generator (arsgated) is linked with AR System 3.2 APIs.

This patch was developed and tested with NT and Solaris AR System 4.0.2. The Solaris aradmin version used is 3.2 and the Solaris aruser used is 4.0.1.

2) Reconfig Tool Workaround.

For NT Only. When using the reconfig tool if the AR System is installed in the default directory c:\Program Files\Remedy (this contains a space) then enter c:\Progra~1\Remedy when prompted for the AR System installation directory.

3) Filter Obsolete.

The SpectrumSubmitAlert filter is now obsolete.

4) arsgated Submit Trouble Ticket status.

For NT Only. When running the arsgated from a SpectroSHELL you will see the runmacro version number and copyright printed out when each trouble ticket is submitted. With AR System 3.2 the trouble ticket number and alarm id was displayed. This isn't true for AR System 4.0.

5) Manual Submit Trouble Ticket Status.

When manually submitting trouble tickets if there is an error the error will be displayed, if it is successful then on NT the runmacro version number and copyright will be displayed and on Solaris "Trouble Ticket Submitted." will be displayed.

6) Changing the SPECTRUM user's Password.

If you change the SPECTRUM user's password or set Prompt for Login then Submit Trouble Ticket will return ARERR329 and Show

Trouble Tickets will display ARERR[1200]. The solution is to do the following steps after modifying the SPECTRUM password.

NT

--

1) Verify the SPECTRUM user's home folder is $SPECROOT/ars_gateway.

2) From the start menu run Action Request System @4.0/Remedy User. Login using the SPECTRUM user and new password.

3) $SPECROOT/ars_gateway/ar.ini has now been updated with the new password.

Solaris

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1) Open a term window.

2) export ARHOME=$SPECROOT/ars_gateway (make sure SPECROOT is defined).

3) From the term window run /usr/ar/bin/aruser

4) login to aruser using the SPECTRUM user and new password.

5) configuration for the SPECTRUM home directory has been updated with the new password.

6) Close the term window.

7) Update System Path Environment Variable.

On NT only. Make sure your system Path environment variable contains the Remedy installation path. If this is not set properly then both the automatic and the manual submits will fail to submit trouble tickets.

8) Manual Submit Problem.

On NT Only. This was an existing 5.0rev1 issue found during our testing but was not documented in the 5.0rev1 documentation. If the probable cause text is too long then the submit fails. For example an alarm with probable cause ID of 0x00011dae reports an error stating that the required field Probable Cause was not set. This happens

because the long cause text causes the runmacro command line arguments to get truncated.

9) Not Importing Active Links

When importing the SPECTRUM Trouble Ticket Form you may choose not to import the SpectrumView and SimilarTickets active links. In this case when you display the SPECTRUM Trouble Ticket the buttons for these active links are displayed but when you try to execute them nothing happens. This is a Remedy issue.

10) SpectrumView/SimilarTickets errors in DOS window

When executing the SpectrumView or SimilarTickets active links they will function correctly but you may see an error similar to the following displayed repeatedly in a dos window:

uname: c:/usr/data/Spectrum/5.0rev1/ars_gateway/SpectrumView 25:

not found

The solution is to add the following to the System's Path environment

variable:

<$SPECROOT>/NT-Tools/NuTC/mksnt;

--

The problem was that AlarmNotifier was getting error messages from SSAPI saying that it couldn't connect to multiple SpectroSERVER's (upwards of 17 for one customer) and then the application failed. This was linked to an occurrence of a map storm. After a map storm occurred, the AlarmNotifier was unable to connect to any SpectroSERVERs. This caused three issues to be pinpointed for SPECTRUM:

a. The EventNotifier and UserEditor reported SSAPI type disconnect error messages

b. the AlarmNotifier failed with errors.

c. false map storm messages were occurring

The customer that found this problem was running on their MOM SpectroSERVER, but this problem occurred for other

SpectroSERVERs as well. To test the the primary/backup switchover they did the following:

a. brought down the MOM SpectroSERVER

b. watched as the secondary SpectroSERVER took over

c. brought back the MOM SpectroSERVER and saw the map storm

d. If the mapstorm in the previous step occurred - the

e. If the mapstorm in the previous step occurred - the AlarmNotifier did not connect successfully.

The resolution to these problems was first to make sure the backup SpectroSERVERs hostname was added to each landscapes host list. Second, the map storm messages we're being seen because the map storm parameters were set conservatively so that natural sequences of updates we're being mistaken for storms. The detection parameters were tweaked and the false storms are not being reported anymore. And third, the timeout of the AlarmNotifier was customized to be 60 seconds versus five or 30 seconds.

--

The problem was that a customer had 22 different distributed SpectroSERVERs, all with individual AlarmNotifiers running and individual policies setup. The customer said that the policies were being changed all the time so the needed functionality to accommodate the following scenario:

Set up two distributed SpectroSERVERs, serverA and serverB, and have distinct policies set up for each, policyA for serverA and policyB for serverB. Then set up two different applications (AlarmNotifiers) associated to the respective policies, AlarmNotifierA and AlarmNotifierB.

If AlarmNotifierA is started on serverA and AlarmNotifierB is started on serverB, and then a change is made to the respective policies on both policyA and policyB on the respective SpectroGRAPH of each server (serverA for policyA and serverB for policyB). AlarmNotifierA on serverA performs correctly and updates the already running AlarmNotifierA dynamically. However, AlarmNotifierB on serverB does not update correctly and it is necessary to bounce (stop and start) AlarmNotifierB (with theGET_EXISTING_ALARMS=true in the .alarmrc file) in order for it to take into account the new alarms.

It was found that running both AlarmNotifierA and AlarmNotifierB on serverA, and doing the same changes, both AlarmNotifiers are updated correctly with a new alarm coming through.

The resolution was to change code so that when logging events, SpectroSERVER will now send the event to the landscape containing The resolution was to change code so that when logging events, SpectroSERVER will now send the event to the landscape containing that model handle rather than always sending it to the primar landscape.

--

The problem was there was an intermittent Segmentation Fault with the SPECTRUM AlarmNotifier. The environment included 17 distributed servers and is running the AlarmNotifier from a "MOM" server to gather all alarms and distribute them to the trouble ticketing software from there.

The resolution was to identify and correct the code that was causing the violation. The fix was tested at the customer site and the Segmentation Fault did not occur anymore.

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SPECTRUM_5.0rev1.P81

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P82

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P83

Never released to customers. Never existed.

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SPECTRUM_5.0rev1.P84

The problem was that filters in the Enterprise Alarm View did not save properly when the "Clear" button and then the "Okay" button

were selected. Also, filter changes are not alway saved although the "Make Permanent" button is selected.

The resolution was to change the condition and state preferences so that they are *NOW* manually written out instead of relying on the preference binders.

--

SPECTRUM_5.0rev1.P85

The problem was when SPECTRUM lost SNMP contact (i.e. via incorrect community name) with a 3Com FMS the model turned RED instead of ORANGE.

The resolution was to change the support_ICMP attribute so that if an illegal community is entered for a model it will turn ORANGE instead of RED.

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SPECTRUM_5.0rev1.P86

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P87

The various SPECTRUM Data Export import scripts (e.g., SDEOraImport) use awk internally to read values for several attributes from the input schema file. The awk commands fail when the schema file gets too large (around 100 records).

The resolution was to replace the faulty awk code with perl code in each of the scripts. Additionally, the dtxscript.tpl (template file) was modified to obtain the perl directory location during SPECTRUM install and export it during run time. Finally, code was added to avoid a macro expansion error in datex.cus.

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The problem was that SPECTRUM Data Export SDEOraImport script drops and recreates indices during every table load (including appends). The table name is obtained from the .SDE file where it's specified as simplySTAT_ROUT. So when the script attempts to drop and then recreate indices (which are created based on the table name)

for table STAT_ROUT Oracle sends out a message that the index does not exist, and an "insufficient privileges" message when it tries to create the index. These messages obviously occur because the actual table that is being loaded is STAT_ROUT_new.

Also, when SPECTRUM models are exported daily the SDEOraImport script automatically assumes that an overwrite is in order. The actual table name is SPECTRUM.MODELS. The MODELS table is needed by both historical and current reports. So, a private synonym was created in the SPECTR schema called MODELS, which points to the SPECTRUM.MODELS table. However, since the SDEOraImport script attempts to drop the table (overwrite) and recreate it as user SPECTR, it gets the "insufficient privileges" error message. In the past this problem was avoided because the table was dropped as user SPECTRUM and a user has the ability to drop and create tables within its schema, but not across schemas.

The resolution was that the generation of the list of tables was changed to include tables, views and synonyms. The structure of each line in the list is now t=b, where t is a table name (b = t), a view name (b = base table of view), or a synonym defined for the current user (b = actual table name in form schema.name).

The function exists() now performs a match on t (in lines of the form t=b), and sets the value of the variable base_table equal to b. All table/index creations and drops now use base_table rather than the table name obtained from the sprm file.

For all tables except those of type "Statistic", the drop/re-create process for existing tables has been replaced by a SQL truncate command. This is more efficient than the drop/create process, and allows resetting of a table across schemas, if DELETE permissions are properly granted. Statistic tables are still dropped and created, since their structures can change from export to export.

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SPECTRUM_5.0rev1.P88

Never released to customers. Never existed.

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SPECTRUM_5.0rev1.P89

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P90

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P91

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P92

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P93

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P94

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P95

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P96

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P97

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P98

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P99

Obsoleted by SPECTRUM_5.0rev1.P100

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SPECTRUM_5.0rev1.P100

Included in SPECTRUM_5.0rev1.P101

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SPECTRUM_5.0rev1.P101

The problem was after modeling a TRMM with a TRMIM-62A, the Chassis Logical View doesn't appear correctly. In the devtop view, the TRMIM-62A is labeled "unknown" in the chassis in the center top window. This occurs with 3.01.01 and 3.02.00 firmware. The customer has provided simulations of the device with both versions of firmware.

The resolution was to fully support the TRMIM-62A management module in SPECTRUM.

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The problem is the customer is seeing that a WA_Link will be RED and the far side router will be GREY but the serial interface of the near side router is Admin/Oper on. When they bring up the DevTop of the far side router, everything turns back to GREEN. They have also seen the opposite. Everything is GREEN but the serial interface of the near side router is Admin/Oper off. When they bring up the DevTop of the far side router, the WA_Link turns RED and the far side router goes GREY.

If you start out with a Green inside router, green WA_Link, and green farside router, then change the community string on the farside router model to something bogus, it goes orange. Its interface IPLS goes to 4 (unreachable). If we then set the nearside interface to Admin down Oper down, its IPLS goes to 3 (Disabled). The farside router goes grey, and the link goes solid orange, then solid grey, then solid orange, then after a long while red.

The resolution was to modify SPECTRUM so that GREY devices will be continually pinged.

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The problem was the connection between the Frame Relay subinterface and ATM subinterface was not resolved.

Some background information that will make the resolution more understandable is as follows:

In 5.0rev1, we use FR DTE to resolve the conductivity of FR interfaces down to the DLCI ports. During AD_ROUTE_TABLE_DISCOVERY action, A router's IP routing table was read and saved to the scratchpad for each interface appearing the IP routing table. The scratchpad is indexed by interfaces index. But if a router has a FR sub-interface configured and the FR sub-interface appears in the IP routing table, we don't create a scratchpad for that FR sub-interface. Instead, we create a scratchpad on the physical FR interface and save all the FR sub-interface's information, such as ipRouteDest, ipRouteNextHop and etc, into FR physical interface's scratchpad. By doing this, we can pass all the routing info to FR DTE, which is connected to the FR physical interface, and let DTE to resolve the conductivities.

During router mapping process (AD_ROUTER_MAP action), we read each entry from the router's scratchpad and map the interface in the scratchpad entry. Since FR sub-interfaces were not scratched by their own IF index(all info was scratched under the FR physical IF), we don't actually resolve each individual FR sub-interface. When mapping the FR physical interface, we are actually dealing with the map of this side DTE to the other side DTE. However, if a FR sub-interface is "directly" connected to another non-FR interface, the routing info of the non-FR interface will not be saved into the other side DTE. So this connection couldn't be resolved during the FR DTE mapping.

The resolution was to create a scratchpad for each FR sub-interface which appears in the IP routing table and save the FR sub-interface's routing info into the both FR physical and sub interface scratchpads. So the FR DTE's can still be mapped, and the FR sub-interface scratchpad can also be used to resolve the conductivities if the other side is not a FR sub-interface.

Cases to be considered:

(1) One side is a FR sub-interface; other side is not and has not been modeled yet.

Skip resolving the FR sub-interface. Only do the normal FR DTE map on the FR physical interface. We may also place a LAN/WA_Link off the FR sub-interface. Also, if one side is a FR subinterface and other side has not been modeled yet, don't place LAN model off the FR subinterface

(2) One side is a FR sub-interface; other side is not and has already been modeled.

We will treat the FR sub-interface as ordinary IF and use the scratchpad to resolve the connection. We'll also do the normal FR DTE mapping on the FR physical interface. The FR sub-IF's routing info saved in the physical IF sratchpad will not be reused for the DTE mapping.

(3) One side is not a FR sub-interface; other side is FR sub-interface but not modeled.

The get_interface_network_mtype() will return LAN mtype for FR subinterface. But the FR subinterface won't be resolved until other side was modeled and is a non-FR subinterface.

(4) One side is not a FR sub-interface; but other side is FR sub-interface and has already been modeled.

Using other side FR sub-IF scratchpad to do the normal mapping.

--

The problem was SpectroSERVER's ability to map traps to certain types of objects was broken. A change had been made to the way the trap mapping is done which require that SNMP communications be established with a device before that device is registered to receive traps in Spectrum.

The resolution was to Put the intelligence back into Spectrum to map traps to devices based on their Agent ID attribute, as well as their IP List attribute.

--

The problem was a SpectroGRAPH core dump was occurring when the cacheZoomedImages from False to True and the defaultZoomLevel was set to 50%. A core trace was made available. Further, if the resource "*shadow" in the spectrum file is set to "false" setting *cacheZoomedImages to true dumps SpectroGRAPH.

The resolution was to modify SPECTRUM so that SpectroGRAPH will not core dump whether or not "*shadow" is set to "true" or "false" and whether or not cacheZoomedImages is set to "true" or "false" and the defaultZoomLevel was set to 50%.

--

The problem was after loading firmware revision 2.21 on a 3Com LinkSwitch (LS) [Superstack II] 3300 device, a ""Device not Configured" message appears in the DevTop View.

The resolution was to modify the algorithm for creating the 3Com LinkSwitch Chassis model in the DevTop view after firmware revision 2.21 is loaded.

--

The problem was there was a SpectroGRAPH core dump when exiting a BdgCSIFDM DevTop View. An adb core trace as well as a Purify trace were made available.

The resolution was to correct the array by the traces.

--

The problem was GRAY models in SPECTRUM were turning GREEN based on the success of a ping request even though Primary Management was not available.

The resolution to this was to remove the disassert call from the are_you_up method. Previous changes assure that GRAY models are pinged on the poll cycle, this will ensure that the model will not stay GRAY, but will transition to ORANGE on the next poll cycle.

--

The problem was the port status for SEHI-24 and SEH-24 model types was blank on each port model in the Device Chassis View. The port status should be located in the upper right hand corner of the port model.

The resolution was to reduce the size of the external attribute request list to the device by half and making two request lists instead of one. This was necessary because the the list of requests being sent to the device was too large for the device to handle.

--

The problem was SpectroSERVERs participating in a virtual landscape map were not sending updates when they updated their own copy of the map. Therefore, servers in the map ended up with dissimilar maps.

The resolution was to correct the "force" flag from not persisting past the first update of a virtual landscape map and to correct the "reset sequence" flag so that it will not be sent out when an update contains no changes.

--

The problem was the installation of Spectrum_5.0rev1.P100 was failing due to the following missing .o files:

CsPSWStatus.o

CsIHDelIfs.o

CsTpGenMI.o

CSEU-TPGEN.e

This was due to a unique installation configuration at the customer site.

The resolution was to include the above files in this Off-Cycle Release.

--

The problem was the E2, E3 & E4 microlans of the 6E123-50 were all BLUE and showed a status of INV in the Device Chassis View when viewed on from a workstation running Solaris 2.6. With Solaris 2.7 the E2, E3 & E4 microlans show no problems.

The resolution was to create a new PORTS_STATE attribute at the SS8H level so that all SS2000 devices pick up this attribute. The configuration process can then continue as normal. Also, the error condition for the IH will not be set to FAILURE when it sees the DEVICE_MDL_HANDLE attribute does not exist.

--

The problem is WA_Links are not clearing alarms when WA_Segment is replaced or moved to a different port with a good condition. The problem presents itself because alarms are not disasserted before a model is destroyed.

This has been resolved by disasserting the alarm before the model is destroyed.

--

The problem is Gen_IF_Port model names do not show up correctly in PGUI applications.

This is caused because watches don't work properly when the db flag is not set.

This has been resolved by using "read_async" calls to get the values.

--

The problem is SpectroGRAPH needs a user-configurable timeout setting.

The resolution was to add the ability to set the connection time limit with SpectroGRAPH and PGUI apps. Use CsMailServOpts:set_connect_time_limit to set the value in the $SPECROOT/app-defaults/spectrum file.

--

The problem was VNM activation time was excessive when the resource: wait_active=yes.

The resolution was to do a background activation and a moot event is waited upon that gets set when all the models have been activate instead of having the activation scheduler activate one model at a time.

--

The problem was when the customer first models a Rtr_Cisco and brings up the Preferred Addresses table, it is populated with all of the IP addresses which are located in the ipAddrTable. When the customer removes any of these IP addresses from the device and does

a reconfigure of the Management Module the Preferred Addresses table still contains the IP's that were removed.

The resolution was to add functionality that will allow the Redundancy Preferred Address list to be flushed when performing a reconfiguration of the device. A new Boolean attribute has been added to model type RedundancyMF. It is called flush_RPA, and it's default value is TRUE. If this attribute is FALSE, the address lists will be handled as they are now. If the attribute is TRUE, the preferred address list will be flushed and a new list will be created from the device's mib.

--

The problem is when navigating into the devtop view of a very large (over 200 interfaces) Rtr_Cisco device, the stacked icons on the top of the cablewalk first display the background of the icons (LANS & WA_Links) then when the rest of the icons are displayed (Model Name and Model Type Name) the background disappears, leaving just the Model Name, Model Type Name, and Down Arrow being displayed.

The resolution was to reset the clip mask. It was not set correctly.

The problem is that the Enterprise Configuration Manager needs long model name support for both configurations and templates in ECM. The maximum length for configurations or templates is 16 characters. Currently, the only long model name support is for devices that were created in Spectrum (modeled) and viewing them through ECM.

The resolution is corrected by allowing the user to enter a template/ configuration name greater than 16 characters but less than 1024 characters as given by 'modelNameDisplayLength' setting in the resource file. Also allowed is a 24 character width name to be viewed in the main window and a 48 character width name to be viewed in the template/configuration window. If the name is greater than any of the values in the respective windows, a message box is popped up giving the name of the template/configuration.

Although there is a limitation to the viewing width, internally ECM stores a configuration/template with a maximum length of 1024 characters. This can be verified by setting the CLIMNAMEWIDTH environment variable in CLI.

--

The problem is trying to capture a host config with an ECM template containing only the host config for a HubCAT1400 fails. The error message received is: "Capture Failed" and clicking on the Details button shows the message, "Cannot find error code in ECM_ERROR file: 0x200000c". Also, closing the Details button and then clicking on it again produces a core dump of the ECM. The following is a customer quoted explanation: "This hardware (the c1400, and its smaller brother the c1100), are an old design, that Cisco inherited when they brought Crescendo many years ago. For some reason, these devices store the config on module 3. Module 3 is not and actual module, it is the processor inside the device. The only insertable modules are the FDDI/CDDI port modules which can go in slots 1 & 2. You should also be aware that the SwCat1200 operates in the same way as the c1400/c1100 and therefore you are also unable to store configs via the current version of ECM."

The resolution was to incorporate a check to find out if the model type against which ECM was run was HubCat1400 or SwCat1200. If it was then the module value setting in CAT_TFTP_MODULE is set to 3 else the module setting remains at 1. For HubCat1400/Swcat1200 devices, host configuration operations can only be performed using ECM. Scmbg cannot be used. For all other Catalyst devices, the model handle specified should be that of the corresponding CatStack app, when using Scmbg.

--

The problem is with ECM. If a scheduled verify of a host configuration fails, the failure causing line(s) in the host configuration cannot be identified in the ecmbg.log. There is an incorrect attribute preventing the log functionality from working correctly. Also, the ecmbg.log is difficult to read and understand.

The resolution is to correct the attribute name preventing log functionality. Also, the ecmbg.log formatting is improved.

--

The problem is trying to load an ECM host configuration to more than one model will fail with the error message: "Not Loaded" with no explanation. The problem arises due to the way ECM handles results, in the case of multi load/captures.

The resolution is to change the function of the host configuration loading so that it will load even when there are no attributes to load.

--

The customer needs to have more flexibility with the Event Configuration Manager for assigning levels of access for users in different managed subnets, i.e. user "A" can use CM in subnet "A" but not in subnet "B".

--

The ECM has been altered so that ECM will not read the community string of the user. But the SPECTRUM security underneath will prevent a user from seeing the devices in other domains and hence prevent users from attempting to load/capture/verify on these devices. The user must have write access to the devices in his domain for ECM host config operations to succeed.

--

The problem was a security issue when the SPECTRUM directories have "write" privileges granted to the group "other". An unauthorized user could potentially go in and replace files in the SPECTRUM directories or place corrupt files/executables that could cause serious damage to a SPECTRUM machine or disk. Only authorized users should have "write" privileges to the SPECTRUM directories and users belonging to the group "other" should not have these privileges.

This behavior, although undesirable, is working as designed presently. The tar command is supposed to behave differently if run as the "root" user and because SPECTRUM is normally installed by the "root" user, "tar" is also running as root.

The resolution was to change newtar to allow a -u flag, which will honor umask even if run as the "root" user. This will mean SPECTRUM can extract the files as the user would like according to their umask setting. However, this will only effect the products/files that you are currently installing. Any files that are currently set to have write privileges to the group "other" will have to be changed manually.

--

The problem is that ATMDisc is not resolving ATM Edge device connections in an ATM Network. An ATM Edge device is a device that lies on the edge of an ATM "Network" or "Cloud". For example, an HSIM with an APIM installed, a BRIM with an APIM, or a 9A426_02,

9A128_01. All these devices are used to connect Ethernet, token ring and FDDI (conventional networks) to ATM Networks.

This was happening because the GET_ATM_PORT_LIST action was not able to respond to devices using the CtATMConfigMib model type versus the ATMClientApp model type.

The resolution was to attach an inference handler to the CtATMConfigMib modeltype so that devices using it will respond to the GET_ATM_PORT_LIST action.

--

The problem was network during Range Test Discovery all network models were being placed in the Universe View as opposed to their appropriate LAN models. A SmartSwitch Router 8000 was used as the seed router. It was found that the problem was with the SSR ipRouteTable. If the SSR has a default gateway configured in the the routing table, then one more instance is added to ipRouteDest. However, no other instances were created in the routing table (ie. ipRouteMask, and ipRouteNextHop). When this occurs a misalignment happens when Spectrum reads the IP table.

The resolution was to correct how AutoDiscovery reads SSR ipRouteTable. It will recognize when a default gateway address is added to the ipRouteTable and align the rest of the instances accordingly. Network models discovered while an SSR acts as a seed router will now be placed in the correct LAN models.

--

The problem was a memory leak was found associated with the CsIHRelayFunction. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was the SpectroGRAPH core dumped while multiple models and alarms were being created. A dbx core trace was made available.

The resolution was to add a check in the View Information Block to prevent any further SpectroGRAPH crashes while Editing and Save & Closing while new models are being created.

--

The problem was Range Router AutoDiscovery was not discovering second tier routers. An example of a scenario where this would occur is as follows:

The customer had 16 backbone routers. They also had 400~900 second tier routers in a few hundreds ClassB networks. They wanted to use the 16 backbone routers as seed routers and then run IP Range Router Discovery to discover all the second tier routers. However, IP Range Router discovery failed to find the routers.

The reason that no router found was that the code only checked the seed routers nextHop addresses to see if the remote side router was within the IP range. If it was, the NextHop address gets added to the discovery list. If it was not, then the remote router gets ignored.

The resolution to this problem is to also check the backbone router's Destination Address. If the Destination Address or the NextHop Address is within the discovery IP range, then the NextHop Address is added to the router discovery list.

--

The problem was a memory leak was found in association with the creation of SynOptics 3000 devices. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was the SpectroGRAPH was producing a segmentation violation when the user exited SpectroGRAPH after a Distributed Find Search. A core trace was made available.

The resolution was to correct code so that no segmentation violation would occur if the user exits SpectroGRAPH after a Distributed Find Search.

--

The problem was the Annotation Toolbox did not use the same grid as the SpectroGRAPH did, regardless if *snapGrid: was set to True or False. This was resulting in some movement of text and graphics when views were cloned and/or zoomed to lesser or greater sizes.

The resolution was to correct the zoomed and unzoomed coordinate calculation so that they did only assume the view was at 100%.

--

Memory leak found in CsRMNSetup.cc

This was corrected by restructuring the code so that deletes are done only once at the end of scope.

--

The problem was that SpectroSERVER was core dumping while running Purify. As Purify had been installed a trace was made available.

The resolution was to correct the code pinpointed by the Purify traces causing the core dump.

--

The problem was the SpectroSERVER was core dumping on a regular basis when modeling Rtr_Cisco models that were undergoing frequent physical configuration changes (frame relay interfaces were being changed to sonet interfaces). The devices were undergoing frequent physical reconfiguration.

The cause for the core dump was that at time T1 (action AD_ROUTE_TABLE_DISCOVERY), IF 129 was physical interface, or not a FrameRelay sub-interface, then later at time T2 (action AD_ROUTER_MAP), IF 129 was configured as a FrameRelay sub-interface. Since the devices were reconfigured very frequently and dynamically mapped their network with Spectrum, above problem could happen.

The resolution was to change the code in CsIHRouterMap::get_subnet_list() not to call get_spectrum_if(). Although the device configuration may change from T1(action AD_ROUTE_TABLE_DISCOVERY) to T2 (action AD_ROUTER_MAP), we should always use the same information gathered in AD_ROUTE_TABLE_DISCOVERY to map the device.

Thus, CsIHRouterMap::get_subnet_list() should never return a NULL pointer, unless the scratchpad is not able to read. In this case, the caller of get_subnet_list() should check the returned pointer before dereferencing it.

Another problem was Fanouts were being placed onto FrameRelay Port interface models in the DevTop View of a device supporting FrameRelay. At times, DLCI port were being connected to the Fanouts (which should not be possible) and/or LAN models. Also, the model type attribute for Frame Relay Port Type (32) was set incorrectly so that a WA_Link would appear vs. a FrameRelay DTE model for direct connections to router or WAN Link.

The resolution was change the value for the VNM model type attribute from 102e2 to 1b80005 Frame Relay Port Type (32).

--

The problem was running a multiple attribute Find with the option "Find All Occurrences" on greater than 1000 models hung the User Interface. Specifically, a customer used the "Find All Occurrences", with a prefix match set on Model Name, and a condition of "YELLOW" was set as the Primary Key.

The resolution was to make more efficient the way SpectroGRAPH searches through the list of existing models to match the attribute criteria set up by the user. Once these changes were made the User Interface will not hang as long.

--

SpectroGRAPH crashes with a core dump when you select the DevTop view for a SwSyn281xx model type. The crash is caused by an entry that SLAM makes in the CsIib/SwSyn281xx/Sy281xx.GSISd file.

The iib file for the SwSyn281xx has an error in it. The "Left_to_right" entry in this file is as boolean flag (TRUE) that allows the icon to place its children icons in a horizontal display from left to right. When it does this the child icons need to have a left to right sequence in their data set. This data set is determined from the DUMMY (x, y) statements in the iib file. In the case of the SwSyn281xx/ Sy281xx.GSISd iib file the x coordinate (the horizontal one) remains the same and the y coordinate (the vertical one) changes.

This problem was also found with the following iibs files: HubCat1400/CatDev.GSISd, HPAdvStkHub/HPAdvStkHub.GSISd, and HubSyn27xx/Syn27xx.GSISd

--

When viewing the device chassis view for any SS2000/SS6000, the ports display as UNK....(blue). They do not go into an active (green) state.

This has been resolved by installing the missing core components.

--

The problem was during AutoDiscovery the SpectroSERVER would core dump. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem is changes made to prevent map storms make SSdbdelete stop working after ten identical attempts.

The resolution was to add a flag to SSdbdelete that removes the stop request.

--

The problem was loading an RMON Profile for 3Com-Switch (Hub3ComPortSwitch) fails with the message "Error Parsing Profile". The parser code was checking if the number of device interfaces (ifNumber) was greater than the Interface Id and then failed.

The resolution was to remove all checks in the parser code where it checked if the Interface Id was greater than the number of interfaces.

--

The problem was user defined actions could not be accessed from the Icon Submenu for SPECTRUM models. They could only be accessed through a special GIB view using a GCT icon. This function was particularly needed for autoplacing RMON probes in the corresponding LAN views as Monitor Points.

The resolution was to create an action object that can be added to an iib file for an icon. The action will take name of menu, action code and text that describes that action to be displayed along with the returned error from the action.

--

The problem was that SpectroGRAPH was crashing (with a trace) consistently in cases where a device was not initialized correctly, the SpectroSERVER was down, etc. For example, a customer navigated to a port on an EMME-6 and then tried to launch something from the menu pick of the icon and the SpectroGRAPH crashed. The customer launched it again and that time it didn't crash. The customer created another device that had the CSIRptPort model for interfaces. When an attempt to launch a program from the menu was made the SpectroGRAPH crashed again.

The resolution was to prevent the SpectroGRAPH crashes by changing the DeviceNode member to initialize to "unknown".

--

The problem was that RMON probes have to manually placed into discreet LANs. It is necessary for them to be in discreet LANs to collect statistical information (i.e. from SpectroWATCHes).

The resolution was to add functionality so that SPECTRUM would automatically place RMON probes in discreet LANs.

--

The problem was that there was an inconsistency in the two methods for creating new models. The community string field in the Model by IP GIB is limited to 16 characters. The community string field in the Model by Type GIB is not limited.

The resolution was to take away the 16 character limitation for the community string field in the Model by IP GIB.

--

The problem was AutoDiscovery of the 2H23_50R was failing to resolve attached devices to a port in the CsRipEnetRptr model. Attached devices were being placed in a fanout in the same LAN container as the CsRipEnetRptr but no connections were resolved. This is caused by the CsRipEnetRptr failing when attempting to

respond to the Get_Address_List action. The GmIHRptrSrcAddr inference handler is getting "no such attr" errors when attempting to read attributes that do not exist in the CsRipEnetRptr.

The resolution was to add a new method which can be called by an MI Node if desired to change which attribute ids are used for reads.

--

The problem was that sometimes the CsIGModel icon in the QuickFind view (custom view) appeared unselected and could not be selected manually.

The resolution was to fix the timing issue that was causing this problem. The CsIGModel should now appear selected and selectable.

--

The problem was when using the NetWideApp to do tftp downloads for multiple 6H202-24 and 2H252-25R devices it displays an error that only states "files systems". If the customer tries doing multiple downloads for other devices it works fine. If the customer tries doing a download for one device at a time for the 6H202-24 and 2H252-25R devices it works fine.

The resolution was to add a new -force-ct-download flag. The Netwide app will now launch mftfp with this flag by default. The syntax is: mtftp -force-ct-download

NOTE: This function will not work for any of the 9AXXX_XX devices.

--

The problem is that when modeling a Cat1900 the device comes up as a Rtr_Cisco.

The resolution was to add functionality to recognize a SwCat1900 and wsc1900LiteFx based on their sysOid values.

The problem is that the SG-Support/CsGib/HubCat5000/CsConfg.GTb table has incorrect column heights which causes the listbox to create a horizontal scroll bar outside the viewing area. This causes the SpectroGRAPH to core dump when viewed if the text exceeds the specified length.

The resolution was to change the column heights to fit inside the viewable area.

--

The problem was multiple memory leaks were found due to the creation of HubBaySt450. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was a memory leak was found due to the creation of a 6E233_49. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was the Netwide Application was not launching from the MicroMMAC small icon.

The resolution was to fix this iib file so that the Netwide Application would be launched from the small icon in every SPECTRUM view it appears in.

--

The problem was that AutoDiscovery and Modeling by IP allowed duplicate models without warning for the following model types: 2E43_51 and 2H23_50R or any other device covered under SM-CSI1068 or SM-CSI1080. As it turned out AutoDiscovery WAS finding the already created model, but then it checked to if the model had the Dev_Model_Handle attribute (meaning the model was a component of some other model). If it has the attribute, it reads the attribute and assumes that model is the already existing model. For some reason many of the model types exhibiting this problem HAVE the Dev_Model_Handle attribute. They shouldn't. It's value was 0x0 for these models, thus when AutoDiscovery read it, it gets 0x0 back, and model appears not to be found.

The resolution was setting the Dev_Model_Handle for the 2H23_50R and 2H33_37R model types to be themselves. This caused AutoDiscovery to not allow multiple modeling of the same device.

--

The problem is that the CsGib/HubCat5000/CsConfg.GTb table has incorrect column heights which causes the listbox to create a horizontal scroll bar outside the viewing area. This causes the SpectroGRAPH to core dump when viewed if the text exceeds the specified length.

The resolution was to change the column heights to fit inside the viewable area.

--

The problem was that the Device Chassis View of the 2E253-49 was not comprehensible. All the ports were squeezed together making all the information in them useless. The 2E253_29R was using the wrong iib file, making it look like a 6000 series management module for the Device Chassis View.

The resolution was to correct the Iib file so that the Device Chassis View is understandable and uncrowded.

--

The problem was that after installing Spectrum_5.0rev1.MMS1, the model name could not be edited in the Model Information View for a HubSyn27xx model type.

The resolution was to change the Model Name field in SG-Support/SG-Support/CsGib/HubSyn27xx/CsStandard.30 from readonly to readwrite. This allows the model name to be edited in the Model Information View for a HubSyn27xx model type.

--

The problem was that a "Device Not Configured" error message appears when attempting to get to the DevTop View of a FddiMAC model of model type's 2E42-27 or 2E42-27R with HSIM-F6's installed. This problem was found particularly with the following install configuration: 4.0rev3, MS1, RS3, MS2 and MS3, CS1/MMS1. Also, no FDDIPort's (A-Type and B-Type) were showing in the DevTop View of the FddiMAC models. Only Rptr Port models were present.

This problem was two-fold:

There was an attribute, PORTS_STATE that did not exist for any SS2000 model type that was NOT derived from MicoLANModule (most 2000 devices). The intelligence tried to read this attribute

before it got through any of the application association processes. When the attribute read failed (on a device that didn't have the attribute), the association process was bypassed altogether, and the model state never reached the active state.

The second issue was similar. The SS2000 devices in question did not have a DEVICE_MDL_HANDLE attribute (again, because they were not derived from MicroLanModule). The appropriate IH tried to register for a change on this attribute, but when it saw the attribute didn't exist, the error code was set to FAILURE and the IH never got attached to the model. As a result, again, the proper model states were never written to as CS_MODEL_ACTIVE.

The resolution to the first part was to create a new PORTS_STATE attribute at the SS8H level so that all SS2000 devices picked up this attribute. The configuration process could then continue as normal.

The second issue was solved by not setting the error condition for the IH to FAILURE when it saw the DEVICE_MDL_HANDLE attribute did not exist.

--

The problem was that a customer requested the ability to enable ports on the Synoptics 3000 after they have been partitioned due to LattisSecure. They had their hubs configured using this feature and when a user moved (i.e. PC was replaced with a new one), the mac address heard on the port of the Synoptics 3000 changed. LattisSecure caused the port to partition. When bringing up the SynOptics Ethernet Port Configuration View, there was a menu to change the state of the port back to enable. This pick did reset the port back to enable, but since the offending mac address was still connected the port partitions when the next packet was not sent.

The resolution was add the proper attributes to assist changing the state of the port for the Synoptics Port Configuration View. A test was run to partition a port when a non-secure MAC came through and it was successful in enabling the port after these proper attributes were added to the Synoptics Port Configuration View. The attribute name is: s3EnetPortAuthStatus. The user will have to set the s3EnetPortAuthStatus to off. By doing this the user will be able to successfully change the state of the port on partition when a non-secure MAC comes through. Also, security features were added to the

board and concentrator level. The user should be able to modify certain attributes of the concentrator, board, and port as needed.

--

The problem was the ctUPSApp model was not appearing in the MicroMMAC's Application View even though a UPS was physically connected to the com 1 port of a MicroMMAC. The ctUpsID oid had to be set through mibtools before the model would appear. Until this application appears, a user cannot set the appropriate "UPS Model" in the Performance View.

The resolution was to add CtUPSMib as a base model type. If it fails to get read during the creation process of the ctUPSApp model the SPECTRUM will try to write to it. This action would then cause the CtUPSApp to be activated.

--

The problem is when Cabletron EMME, MicroMMAC and SEHi devices reboot the security configuration is deleted and must be manually reconfigured on the box. The customer would like the ability to use ECM to save and restore port locking information on these devices. These devices use RptrRev4Mib and they do not include the security attributes available in the RptrRev4SecMib. The RprtrRev4SecMib cannot simply replace the RptrRev4Mib for these devices because of firmware issues.

The resolution was to add the security attributes from the RprtrRev4SecMib via a new model type: RptrRev4SecFrag. The attributes created under RptrRev4SecFrag are:

rptrSrcAddrListId

rptrSrcAddrAddressList

rptrSrcAddrSrcTableEntryId

rptrSrcAddrSrcTableEntryPort

rptrSrcAddrSrcTableEntryPortGroup

rptrSrcAddrMgmtSrcAgeInterval

rptrSrcAddrMgmtPortLock

rptrSrcAddrMgmtActiveUsers

rptrSrcAddrMgmtHashType

rptrSecurityLockState

rptrSecuritySecureState

rptrSecurityLearnState

rptrSecurityLearnMode

rptrPortGrpSrcAddrLockGrpId

rptrPortGrpSrcAddrLock

rptrPortGrpSASecuritySecureState

rptrPortGrpSASecurityLearnState

rptrPortGrpSASecurityLearnMode

rptrPortSecurityPortGrpId

rptrPortSecurityPortId

rptrPortSecurityLockStatus

rptrPortSecurityLockAddAddress

rptrPortSecurityLockDelAddress

rptrPortSecurityDisableOnViolation

rptrPortSecurityFullSecEnabled

rptrPortSecuritySecureState

rptrPortSecurityForceNonSecure

rptrPortSecurityLearnState

rptrPortSecurityLearnMode

rptrPortSecurityListPortGrpId

rptrPortSecurityListPortId

rptrPortSecurityListIndex

rptrPortSecurityListAddress

--

The problem was that the RMONFilter and RMONPacketCapt had an OID set by sys_oid_verify when the did not need one. Further, the OID was identical to the one set for a HubSynTR3xxx model. This was causing problems when modeling a HubSynTR3xxx with Model by IP. Upon modeling a HubSynTR3xxx with model by IP the device would get a yellow alarm and model mismatch error.

The resolution was to remove the sys_oid_verify value for the RMONFilter and RMONPktCapt model types. Since these models are applications the value was not needed.

--

The problem was Frame-Relay DTE models were not being created for the CSX400 model type. There is a model type rfc1313App, which is specific to the CSX400 model type, but the Frame Relay manager uses fr1315App to create the DTE's.

The resolution was to add Manages Meta-Rule between CSX_Device and FrmRlyAppDerPt.

--

The problem was that any model type whose default value for System_Desc_Verify equaled GENERIC_SNMP_DEVICE would cause that device (i.e. HubCat5509) to be created instead of a Generic SNMP Device model type.

The resolution was to change the value of System_Desc_Verify to be <blank> instead of "GENERIC_SNMP_DEVICE" so that if a customer models a device for which they do not have a Management Module it will be correctly modeled as a Generic SNMP Device.

--

The problem was when RMON Probes were used as monitor point for LAN 802.3 and LAN 802.5 they would not show the same figures as the RMON Segment View or as other RMON Software (i.e. HP NetMetrix).

The resolution was to correct the following formulas:

a. WatchUtil - which provides the TR_Mon_Util attribute to the LAN802.5 GIB view. The formula was changed from:

TR_Mon_Util=TR_Mon_Bytes_Per_Second/TR_Mon_Ring_Speed

to:

TR_Mon_Util=((MonBitsUsedPerSecs*100)/TR_Mon_Ring_Speed)

b. WatchBitprsec - which calculates the load for Token Ring. The formula was changed from:

MonBitsUsedPerSec=TR_Mon_Bytes_Per_Second*8

to:

MonBitsUsedPerSec=INTEGER((COUNTER_DELTA (mp_mlayStsOctest)*8 + COUNTER_DELTA (mp_mlayStsPkts)*8*21)/COUNTER_DELTA(TIME))

** NOTE: A factor of "21" was used to account for framing bytes vs. 17. This conforms with the original formula for 8 this watch and also to other TR watches which calculate the same thing (i.e. CtTokenRingApp's Watch formula "TR_SW_Load").

--

The problem was a customer had several 2E42_27RDC's with firmware revisions 4.08.09, 5.00.06 and 5.01.03. All had the same issue with bringing up their DevTop views. When drilling into the DevTop view an error window was displayed with "The Device has NOT been CONFIGURED" message. Essentially, there was no support in SPECTRUM for the 2E42_27RDC model type.

The resolution was to add support for the 2E42_27RDC model type.

--

The problem was that ATM Discovery was crashing when performed on the Windows_NT platform. A trace was made available through Dr. Watson.

The resolution was to correct the function that was identified as causing the crash.

--

Three problems were resolved. The first problem was ATM Discovery was setting up proper associations, but they were not getting reflected in the SpectroGRAPH views.

For example:

If port 1A1 of switch A is connected to 1D4 of switch B , the ATM discovery establishes the Link connection between two ports as

1A1 -- CONNECTS_TO -> Fanout <- CONNECTS_TO -- 1D4

The fanout will be collected by SW_LINK model .

If the port connections are changed, if 1B2 port of switch A is now connected to 1D4 of switch B and then atm discovery is executed, the following happens:

ATM Discovery will see that a fanout model is available and the 1D4 port of switch B is already having a Connects_to relation with the Fanout. So, it establishes Connects_to relation between 1B2 port of switch A and the Fanout only. Then, Connects_to relation between port 1A1 of switch A and the Fanout is removed.

The resolution was to remove the existing connects_to relation for this Fanout and once again establish the connects_to relation with Fanout for both the ports (not only for the changed port).

The second problem was if an existing link between switches was removed and ATM discovery was executed once again, ATM discovery leaves sw_link models behind. This is happening because atm discovery doesn't cleanup the unused sw_link models like it cleans up unused ATM_Network models.

The resolution was to modify the ATM discovery so that if any unused SW_LINK models exist in an ATM_Network model then all the associations for the SW_LINK will be removed and the model will be destroyed.

The third problem was that is_port_ATM (), a member function of ATMNetwork class, reads the IFTYPE attribute (0x1134c) for port models.

If the iftype is either ATM, SONET or OTHER then this function returns TRUE. However, the ATM ports in Fore & Zeitnet are displayed using GenSwitchPort (0xaa0009 model type handle). This function always returns FALSE for the ports of Zeitnet & Fore Switch because the attribute 0x1134c is not available in the GenSwitchPort model type. This creates problem especially for Fore & Zeitnet switches in some areas of ATM Discovery. The code checks whether this port is connected to any remote device, if it is not it checks

whether it is an ATM port. If it is an ATM port it will remove any connects_to relation that this port has. Since for GenSwitchPort the value returned by is_port_ATM is FALSE, the connection will not be removed.

The resolution was to add a check in the is_port_ATM() function to return a value of TRUE if the IFTYPE is GenSwitchPort.

--

The problem was that not all the information was showing up in the Link Information View for ForeSwtiches with redundant inter- switch links. Port connectivity would be listed incorrectly, for example:

If there are three connections between switch A & B as below

A	B
1a4 (3)	1c4 (19)
1b3 (10)	1c3 (18)
1b4 (11)	1c2 (17)

The link information would show that port 3 (1a4) of switch A was connected to port 17 (1c2) of switch B instead of actual connection port 3 to port 19.

The Link Information View is accessed from a Live Pipe connecting the ForeSwitches in the SPECTRUM topology.

The resolution was to modify existing code so that the correct connection information about the remote port can be gathered and stored for the port that is connected to it during the discovery phase. This information will be accessible via the Link Information View.

--

The problem was ATM Discovery was moving ForeRunner models from inside a LAN Model to the Universe View. This was occurring after the models were manually cut and pasted into the LAN and the IsMovable attribute (0x11a80) was set to FALSE.

The resolution was to change ATM Discovery so that it will check to see if the IsMovable attribute is set to FALSE. If it is, then it will not move the model from the LAN back to the Universe View.

--

The problem was ATM discovery was not resolving any connections other than those between ForeSwitches. When ATMDISC was run against an ATM network none of the LaneClient (9A128/9A426/ SS2200), ZX250 (6ATSM, 9A100), or Predator connections are resolved, and an error message was produced:

```
*** Error: Cannot obtain ATM neighboring devices
for ATM switch 0x5700016
```

The resolution was in several parts:

1. Modify the ATMClientApp Model type so that a device model with ATMClientApp should respond to two actions sent by ATM Discovery.

   a. GET_ATM_PORT_LIST action : In response to this action the device model with the ATMClientApp should respond with the values for "port mh", "port mth", and "port oid" for the port models with iftype value 37 or 39 (ATM, SONET).

   b. RESOLVE_ATM_PORT_NAME action : The device model with ATMClientApp should find the entry from MIB II Interface table which has ifdescr that matches the value sent by ATM Discovery. In response to this action the device should send back the instance of that ifentry.

   The ATM Discovery sends these actions to the device model. Using the new action redirector / action responder mechanism introduced in mdlsv.1 generic, GET_ATM_PORT_LIST & RESOLVE_ATM_PORT_NAME actions will be redirected to ATMClientApp.

2. Implement the RESOLVE_ATM_PORT_NAME sent by ATM Discovery in all Model types with the ATMDiscFrag component as a base model type (e.g. ForeSwitchApp - Fore).

3. Modify the GET_ATM_NEIGHBORS action to check whether or not the remoteipaddress attribute for a port has a valid IP. If yes, it will send it to ATM Discovery. This action will no longer stipulate that portoperstatus attribute is "up" before it sends the IP to ATM Discovery.

--

The problem was ATM Discovery ran it tried to resolve all the ATM models in the database. This should only occur when you run AutoDiscovery from the Universe view. If AutoDiscovery is run from a IPClassX, Network or LAN container it should only look at the ATM switches contained within it and those that are connected to them.

The resolution was in several parts:

1. The AutoDiscovery code has been modified to call ATM AutoDiscovery with an additional parameter, the modelhandle of the Topology model from which AutoDiscovery is launched.

If the AutoDiscovery is launched from the Universe view or from the command line without any arguments , the ATM AutoDiscovery works the same as before. For this purpose additional data members were added to the Landscape class (CsTboolean complete_disc & CsModelHandle parameter_mh). If it is a complete discovery then the complete_disc attribute is set to TRUE.

2. If the AutoDiscovery is launched from any other Topology model other than Universe view then:

a. The complete_disc attribute is set to FALSE.

b. A search is made for all the models in landscape with the ATM_ADISC_FRAG component. However, an ATMSwitch object is created for only those models which are collected by the Topology from which AutoDiscovery is launched and added to the switch_list. For this purpose COLLECTED_BY_LIST attribute (0x10c48) is read for each ATM Switch model found.

c. If an ATM Switch is collected by the Topology from which AutoDiscovery was launched has a connection to another ATM Switch which is not collected by that Topology then it will try to find the neighbor switch and add it to the switch_list. To achieve this we read the neighbor information for each port of the switch (for switches that are present in switch_list). If it has neighbor, add it to the switch_list (if it is not there already) if it is an ATM Switch and if it is not already present in the switch_list.

d. A search will be performed for all the models with the model name ATM_Network. An AtmNetwork object will be collected for those models which are collected by the Topology from which AutoDiscovery was launched and they will be added them to network_list. For this purpose COLLECTED_BY_LIST attribute

(0x10c48) is read for each ATM Network model found. In case the AutoDiscovery is launched from AtmNetwork model itself then it will be added to the network_list.

--

The problem was a multiple memory leaks were found while Spectrum_5.0rev1, Spectrum_CS2/MMS2, Spectrum_5.0rev1.P54 and Spectrum_5.0rev1.SLAM-P54 were installed. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointedby the Purify traces.

--

The problem was SpectroWATCH watches will not stop polling or logging until the watches are destroyed.

The resolution was change how the values were being propagated in SwIHEval.

--

The problem was modeling a SS6000 in distributed environment resulted in an error for the 6C105 and no blades were placed in the Topology View. The error was as follows:

```
Error: Model Type of Device XXX.XXX.XXX.XXX Already
exists and cannot be related to this viewed model.
Existing Model: 6C105 of Type 6C105
```

The modeling was occurring properly, but the blades were not getting placed into the Topology. This was because the AutoDiscovery code was discovering the chassis as it pinged the IP and then created it. Then the Management Module got triggered and created the blades themselves. But AutoDiscovery only knew about the chassis, so it attempted to place it in the Topology, which results in the error window, as the chassis is not topologically significant.

The resolution was to change AutoDiscovery so that during the Model by IP process it will fire off a new action containing the model handle of the view which should be Collecting the model(s). The action will fail for MMs that don't implement it, in which case AutoDiscovery will behave as usual by setting up the Collects relationship with the proper Topology. For Management Modules that do implement the

action, i.e. anything that's capable of DMF, AutoDiscovery will do nothing, and the Management Module will set up the Collects relationship with their topologically significant models. For the SS6000, this will be all the blades, for the 9AXXXX-XX boards, this will be the SFSmartCell.

--

The problem was when a socket to a SpectroSERVER was blocked, new alarms from that server stop showing up in clients which show alarms. Cleared alarms persist. The following scenario describes the problem:

There are servers A and B, and A is modeling B. There is an Enterprise Alarm Manager launched from a graph-only machine or from the server A machine itself (from the command line or from the GUI) against server A, and its filter is set up to show alarms from both A and B. Call this client 1. The view is dynamic for both server A and server B, in that new alarms show up when they are asserted and disappear when they are cleared. Another EAM is launched (from the command line) from another graph-only machine against server B, in which only server B's alarms are shown. This is client 2. This view updates dynamically, as designed.

At some point, a third client opens a socket to server B. The client could be EAM or vnmshd (there might be more which we have not witnessed). This third client's socket becomes blocked, for whatever reason.

At this point, client 1 and client 2 stop showing updates for alarms on server B. A CLI show alarms shows new alarms which are not showing up in EAM. Also, EAM is showing old alarms, which according to CLI have been cleared. On client 1, alarms for server A are still showing up properly.

Once client 3 is killed, clients 1 and 2 begin to dynamically show alarms for server B

The resolution was to add a timeout on write requests in CsBlockingCif. This will be settable via the .vnmrc ("send_message_timeout"), with a default setting of 180 seconds (3 minutes). Therefore if one client's socket is blocked, updates may be delayed for 3 minutes, at which time the rogue client's socket will be closed and normal updates will resume. This allows the VNM to resume alarm updates after a delay.

--

The problem was that SpectroSERVER was core dumping several times over a period of three days. All the SPECTRUM systems were in a distributed environment using a MOM SpectroSERVER as the main location server and for modeling remote landscapes. Of the 12 SpectroSERVERs in the environment, two have experienced this SERVER core dump and three (the previous two systems included) have been experiencing a problem with the SpectroSERVER growing in memory use while the DDM database grows in size.

The resolution was to add code fixes to the connection layer to prevent the SpectroSERVER core dumping and growth in memory use.

--

The problem when attempting to set the "Desired Operational Mode" in the Fast Ethernet Configuration window for a Cabletron Fast Ethernet port the only set that works is "Auto-Negotiation". Sets to other menu options 10Base-T, 10Base-T Full Duplex, 100Base-TX, 100Base-TX Full Duplex fail. When the Apply button was clicked on SPECTRUM went out and made sets to both the Desired Operational Mode and the Advertised Ability. If only the Advertised Ability was changed the set worked fine. A

The resolution was to add a menu option for the port models of Cabletron Fast Ethernet devices called "Enet Based Config". This view is accessible from the Device Chassis view of the parent device This view will launch the correct SPMA for the device, which in turn allows all available Desired Operational Mode's to be set. These are: Auto-Negotiation, 10Base-T, 10Base-T Full Duplex, 100Base-TX, and 100Base-TX Full Duplex.

--

The problem was Frame Relay port and connections were "disappearing" after SPECTRUM lost contact with devices that were connected by Frame Relay. This problem was not easily reproducible, but was found to occur frequently when Frame Relay reconfiguration event happened during the time when there was no contact to the device. In the event of a reconfiguration, the frame relay modeling was updated when the logical (internal) modeling was compared to the physical (external) representation. This was done by reading the device's frCircuitIfIndex=1.3.6.1.2.1.10.32.2.1.1 table. If during the reconfiguration the MIB was not read successfully, the reconfiguration

would occur anyway. All the DLCI OIDs which were not read successfully from the device would then be then destroyed from the Frame Relay Modeling.

The resolution was to add a check called DCM_END_OF_TABLE. This check will make sure that only the whole table was read before the reconfiguration could occur. If the whole table is not read, the reconfiguration will not occur.

--

The problem was that some Management Modules application model types had the attribute NEED_DUPLICATE_MODEL set to TRUE. This was causing a "Duplicate Model" alarm to appear when the application model was created.

The resolution was to add a check to discern between application models and device models before creating a "Duplicate Model" alarm.

--

The problem was that the BECN and FECN Thresholds on DLCI_Ports were not creating an alarm or event when the thresholds were violated.

The resolution was to change the BECNS_PER_FRAMES_OUT and FECN_PER_FRAMES_OUT attributes from type REAL to INT so that an alarm would be created when the threshold was exceeded.

--

The problem was that when either the IfOperStatus or the IfAdminStatus for a WA_Link was "testing" a RED alarm was asserted. This is incorrect. An ORANGE alarm should have appeared for the WA_Link and the Live Pipe should have been BROWN. Also, if both the IfOperStatus and IfAdminStatus were "testing" then the WA_Link and Live Pipe were GREEN. In this case the WA_Link should also be ORANGE and the Live Pipe should be BROWN.

The resolution was to add a new enumeration for IF_ADMIN_STATUS. If IfAdminStatus is "UP" and IfOperStatus is "TESTING", then and ORANGE alarm will appear for the WA_Link and the Live Pipe will be BROWN. Of if IfAdminStatus is "TESTING", the Live Pipe will be BROWN.

--

The problem was that an error shows up in the SPECTRUM Control Panel when the Event Configuration Editor is launched from it. This occurs on the Windows_NT platform only and the error message is:

> errorCsTSsteae_VendorError: The directory cannot be found. Configure trap mappings will not be available

This occurred even though the user had full permissions to the entire CsVendor directory, and the $SPECROOT, $SG_INSTALL_ROOT. The ECE starts without a problem from the command line.

The resolution was to correct the way the CsVendor directory was being built and implemented. The error message should no longer occur and the ECE should be able to be launched from the SPECTRUM Control Panel.

--

The problem was that WA_Links were sometimes turning RED incorrectly. This issue came about when a customer tried to change the community name of a router connected to a WA_Link. The router turned ORANGE and the WA_Link turned RED. This is due to the way WA_Links monitor the state of their connected ports. Every Polling_Interval, the WA_Link checks its status, first by it's normal algorithm, and then by examining its connected ports. This checking was based only on SNMP contact (read by Dev_Contact_Status). In a case where a WA_Link gets triggered and sees that one of its neighbors is down and the other is up will cause the WA_Link to turn RED. This could prove to be a false alarm if only SNMP contact is lost, but ICMP (read by Contact_Status) contact still remains.

The resolution was to implement ARE_YOU_DOWN and ARE_YOU_UP actions to first check SNMP contact via the traditional "ECHO_ACTION". If the ECHO_ACTION fails during an ARE_YOU_DOWN request, then SPECTRUM will check to see if ICMP is enabled for the device (by reading Contact_Status). If so, then we'll try the SUPPORT_OTHER_PROTOCOL action (ICMP ping) on the device. If that fails, then the device is really down. If it succeeds, then the device is up. A similar process will be performed for the ARE_YOU_UP action.

--

The problem was a customer had a bridge that was connected to a GenFDDIMac_NM. The other side of the Bridge connected to a

Router. When the Bridge went physically down both the bridge and the router went GRAY. The Bridge should have gone RED and the Router GRAY but that did not happen since the Bridge was connected to the FDDIMac_NM.

The resolution was to add functionality so that if contact to a device is lost and that device has a non-manageable neighbor upstream, that upstream device will now go RED instead of GRAY. The inference handler responsible for this functionality will always respond that the device is up when asked ARE_YOU_UP, and that the device is not down when asked ARE_YOU_DOWN.

--

The problem is that when just one single non-instantiated model type is identified with "Model by IP" for a device (i.e. IBM 0x10203) it will not get modeled and an error message will appear:

> Device may not be responding to SNMP requests. Timeout and retry values may be too low or community name public may be incorrect.

The resolution was to update the code to make sure that the identified model type can be instantiated. If the model cannot be instantiated then it is removed from the list and a Generic SNMP Device is created.

--

The problem was DS3 interfaces (ifType 30) were being created as Gen_IF_Ports instead of Serial_IF_Ports for Cisco Routers.

The resolution was to modify SPECTRUM code so that DS3 (ifType30) interfaces would be modeled with a Serial_IF_Ports model type.

--

The problem was if a CSIIfPort turned ORANGE then the interface double click zone located in the upper left hand corner of the CSIIfPort icon in the DevTop View would turn BLUE.

The resolution was to add a means for the icon to handle an ORANGE color condition when the CSIIfPort turned ORANGE. The double click zone should now also turn ORANGE.

--

The problem was modeling 9A656_04's or 9A686_04's as SFSmartCell Models with other 9000 boards also created causes the incorrect DevTop View to be displayed.

The resolution was to correct the display action of the DevTop for the SFSmartCell and now the correct DevTop view will come up for every 9000 board that is modeled.

--

The problem was GIB views displaying a SPECTRUM view Banner from the 6H133_37 Management Module showed no value for the Manufacturer attribute.

The resolution was to set the Manufacture attribute to "Cabletron".

--

The problem was SPECTRUM ReadOnly (ADMIN, 9) security was not working when in SS9000 and SS6000 GIB Views. The security string inheritance was not aware of the CollectsChassis relation. The 9CX14 model does not inherit the ADMIN security string from the 9A128_01 or the LAN container. The 9CX14 model has an association to the LAN container of CollectsChassis and no association to the 9A128-01 model. The 9A128_01 has a CONTAINS relationship to the 9CX14 model. With no security on the 9CX14 chassis model, a ReadOnly user has full access to the device and can turn ports on or off.

The resolution was to add an attribute to the Security_Model model type (0x102c0). This attribute is of type RELATION_HANDLE and has the name CollectsChassisRelation. It is like the CollectsRelation relation except for its default value which is the relation handle for the CollectsChassis relation (0x10028).

--

The problem is that the customer has a Cisco router with ISDN interfaces. The interfaces are constantly going up and down. This is resulting in the device sending a trap for each occurrence. When the trap is received, SPECTRUM generates a red alarm for each port that goes down. For the ISDN interfaces this is a normal state and the ports should not show an alarm status. The trap that is being sent from the device is the generic linkDown. The alarms generated on the ISDN interfaces are a result of two inference handlers, CsIHRollPL and CsIHPrtAlrm. Both IHs register for linkUp and linkDown events.

CsIHRollPL will transmit the SPECTRUM event from the router device model to the appropriate port instance if the information is contained in the trap. This inference handler is attached at the GenSnmpRouter model type. Therefore, it only seems to be running for router model types at the moment. The CsIHPrtAlrm IH will trigger on the link event sent from CsIHRollPL (or any other IH for that matter) and create a RED alarm for linkDown traps or disassert any previous alarm for a linkUp trap.

The resolution is to create a new boolean attribute that was added to the Gen_IF_Port model type. This allows that some ports of a particular device can be specified to alarm on receipt of the trap while others will not. Also, a particular port (e.g. ISDN) can be set not to alarm by default.

--

The problem is that the Unmanaged Trap Handling set by the user in the VNM Control View will be overwritten by the default value if the SpectroSERVER is shutdown and restarted. For example, if the widget is set to "Disabled" and then the SpectroSERVER is shut down and restarted events WILL be created as a result of the traps from unmodeled devices. The normal behavior should be that events will not be created as long as the widget is set to "Disabled". It is important to note that events are not created until the SpectroSERVER is shut down and restarted.

The resolution is to modify the inference handler to read the VNM model's version of DisabledManagedTraps versus the default value upon SpectroSERVER start up.

--

The problem is that SIP (ifType 31) interfaces of Cisco Routers were being modeled by SPECTRUM as Gen_IF_Ports versus Serial_IF_Ports. This was causing inaccurate Performance data to be generated for the customer.

The resolution is to modify SPECTRUM code so that SIP (ifType 31) interfaces would be modeled with a Serial_IF_Ports model type.

--

The first problem is that linkDown traps dispense event 0x220002 which CsIHPortLinkTrap::trig_event() asserts a RED alarm on. For a

set of ifType ports throughout the enterprise, these traps are simply the result of a transient remote connection, which is being deliberately disconnected by the remote user. Alarm generation is unwanted in these cases, and currently imposes a real burden on the alarm management process.

The AlarmOnLinkDownTrap attribute introduced in a recent patch allows the suppression of the alarm due to event 0x220002 on port models which have that attribute value set to 'Never'. The second problem is that setting this value at all port models is labor intensive, and would require maintenance after device reconfiguration, or creation of new router models.

The resolution is to introduce a second attribute at data_relay_prt which is a list of ifTypes specified by the customer through the MTE. Any model, of that model type, which has an ifType value in this list of ifType values, will have its AlarmOnLinkDownTrap attribute value set to 'Never'. The default value will be empty. The customer will then evaluate the set of ifType values for each specific model type of interest, and update the new 'NeverAlarmOnLinkDownIfTypes' list attribute at that model type. Upon the next activation of a port model, the update to AlarmOnLinkDownTrap will occur. Subsequent occurrences of the 0x220002 event will be handled accordingly.

--

The problem is that when a remote VLAN server is modeled on an NT SPECTRUM system with 5.0.1/CS1/MMS1 the user will lose almost all SPECTRUM view function. Application such SpectroGRAPH, AlarmView and Events are usable until the VNM reaches 100% activity. After that, nothing can be opened. If a SpectroGRAPH connection is already established, the user manipulate the database. Once the original SpectroGRAPH is shut down another one cannot be opened. Applications such as SpectroGRAPH, AlarmView, and Events will report the error "There is no server listening on port 0xbeef" or "Failed to connect to server <machine_name>. Location on spec158 failed to connect, not listening on port 0xbeef".

The resolution is to correct the byte ordering issue that is being caused by this circumstance. The remote host port number is never being translated from network order to host order.

--

The problem is there is excessive polling with SPECTRUM 5.0rev1, which results in a "sluggish" system.

The resolution is to correct two aspects of performance and polling in SPECTRUM. First, a new method was created to make performing external reads more efficient by treating each each list attribute to be read as a separate entity. Second, a a new gather_ext_list method in CsModel will cause an additional get_next request to go to the device. The request will contain no objects to get. If the device responds with no error, the dcm layer will seg-fault as it has not allocated any space to store the response.

--

The problem is when a duplicate model of a ZX-250 is created SPECTRUM does not produce an alarm. This is occurring because there is no MAC address on the ATM interface of this device. It is the ATM interface that holds the IP address of this device. The current inference handler responsible for asserting a duplicate alarm requires a valid MAC address attribute from the device. Because the ATM interface has no MAC address the device model and duplicate model don't have one a MAC address either and the inference handler looking for duplicate models by MAC address fails to assert an alarm.

The resolution is to re-write the inference handler so that the model is no longer required to have a valid MAC address attribute for the duplicate model alarm to be asserted.

--

The problem is when mapping traps in the Event Configuration Editor, if the value of specific trap ID or if any octet in an OID mapping was greater than 64k, ECE will not save the trap. For example the OID string would have the 65926 present in one single octet (1.3.4.5.6.65926.7.8). The error message is, "Entry not saved. Invalid Trap ID, must be dot separated OID string." The problem does NOT exist if trap is mapped directly through the flat files.

The resolution is to have SPECTRUM duplicate the trap id string as it is received from the text widget and then clean up the memory after validating the string. Also, the maximum value for oid strings was increased to greater than 64K (ie 75000).

--

The problem is that there is now way for SPECTRUM to integrate devices or find a particular interface by using Secondary IP address. Since SPECTRUM does not store secondary ip addresses in the database, there's no way of being able to do a find on them. SPECTRUM only puts one of possibly many IP Addresses in the "ip_address" attribute of an interface model. SPECTRUM uses the term "secondary ip address" to indicate the other ip addresses of the interface. However, the MIB really does not distinguish between a "primary" and "secondary" interface. SPECTRUM just calls the first one (in canonical order) the primary interface - all others are secondary. The secondary addresses are not stored in any attribute, and are store in a scratchpad only if the "Secondary Address Panel" is viewed for a particular interface.

The resolution to this problem is one new inference handler has been introduced and one has been modified:

a. CsIHIPAddressList, will be attached to the device. CsIHIPAddressList::trig_model_activate() will read the MIBII ipAdEntAddr list attribute, if it exists on a given device model. (if derived from IP) This response list will be stored in the new deviceIPAddressList attribute requested.

b. CsIHIPAddressList::trig_timer will be registered to re-scan this ipAdEntAddr with the polling interval, in hours, stored in the newly requested attribute deviceIPAddressListPollInt.

c. CsIHIPAddressList::trig_attr_change will be registered to watch INTERFCE_STATE, if it exists on this device model. If the change goes to 'Active', then a possible IP table modification is assumed, and the ipAdEntAddr table is rescanned, and the outstanding timer is unregistered, then a new timer is registered.

Thus CsIHIPAddressList maintains a snapshot of the complete list of IP addresses on a device model.

--

The problem is the SPECTRUM VNM is filtering alarms is the following scenario:

SPECTRUM is monitoring a piece of hardware, Sentinel, that tracks contact closures. A contact closure is when any of the devices connected to the Sentinel (e.g. Telcom Switch) is switched on or off. The Sentinel has an SNMP Agent which provides proxy management

for the connected devices. When the device is shut off the contact closure is noted by the Sentinel and a trap is sent. The trap is mapped to an event that creates an alarm. The trap represents a Telcom device being turned on. Before the alarm is cleared, the Telcom device unexpectedly switches off which sends another trap to Spectrum. Since the Varbind data is the same as the first trap and an alarm is still active, the VNM filters the alarm and it is not seen by the user.

The alarm system has always favored minimizing the number of alarms generated. In many cases a duplicate symptom may be generated and the user doesn't want to see duplicate traps. When SPECTRUM receives a trap with the same OID it has always considered it a duplicate symptom and doesn't create a separate alarm.

The resolution is to create a "U" flag in the EventDisp syntax so that anyone can specify that a separate alarm be created for each occurrence of an event. A checkbox is added for the new "U" flag in the Advanced section of the Event Configure Message dialog. The "Primary and Secondary" button in the AlarmManager's View --> Filter --> State view will allow the user to see all the unique alarms listed.

--

The problem is that SPECTRUM is not resolving certain models (ie. Cat5000,5500,1200, etc.) down to the port level through AutoDiscovery and therefore devices go GRAY vs. RED when the device goes down. For example, if a Cisco router connected to 6 WA-Link and 2 IPClassB containers goes down then all the devices in the view will go GRAY. A red fault isolation alarm will be created, but the user is unable to determine which devices are associated with the fault. The device should display a RED alarm so that the user can get an alarm on the device. In a case where a user is running multiple servers and 10,000+ devices, the normal workarounds (i.e connecting the other end of the router then Fault Isolation will work) are not feasible due to numbers of devices and servers

The resolution is to alter SPECTRUM so that Device Fault Isolation can now recognize the situation where a device connected to only Fanouts or itself can go down and the device will go RED instead of GRAY.

--

The problem is that IfDescr and IfName need to be displayed on all Gen_IF_Ports icons.

The resolution was to update the Iib so that IfDescr/IfName could be user configurable. IfDescr is displayed by default. If the user wishes to display ifName instead, comment out the first line and uncomment the second line in the Gen_IF_Port/IFacePrt.IFCE and Gen_IF_Port/IFaceTwo.IFCE Iib files.

PrtLabel.DIOctTxt(3, 43, 110, 20, 77, 77, 0, 0x0001134b,14, "Center", GoViewNW("Model Information", GENERIC, "CsStandard"))

// PrtLabel.DIOctTxt(3, 43, 110, 20, 77, 77, 0, 0x00011f6f,14, "Center", GoViewNW("Model Information", GENERIC, "CsStandard"))

**Note: In the Iib file Gen_IF_Port/IFacePrt.IFCE there is a icon positioning discrepancy. PrtLabel.DIOcdTxt (uncommented for IfName) and PrtLabel.IFNM will write on top of each other if they are both uncommented. This will be corrected in a future release.

--

The problem is that an unwanted SPECTRUM Event is occurring in the following scenario:

When SPECTRUM is running Fault Tolerant SERVERs, and AlarmNotifier is set up to send an email when the Primary SERVER has lost connection to the Secondary SERVER (Event 0x10c0e). If the Secondary SERVER is shut down, this works fine. However, shutting down and restarting the Primary SERVER will cause this event to also be generated, causing the AlarmNotifier to send e-mail that the Primary Server lost connection to the Secondary Server.

The resolution is to change the inference handler handling the shut down event to check see if the server is shutting down before generating the event.

--

The problems and resolutions to several enhancement requests for SPECTRUM Non Persistent Connections functionality are listed below:

a. Filter linkDown alarms from dialup port on routers monitored via SPECTRUM. Upon connection to a backup router port, Dialup_Link

intel will set the AlarmOnLinkDown attribute to "Never" to suppress the critical alarms which are otherwise asserted.

b. New NPC scenarios involve a variable, router and router port on the host side of the connection, the answering side. The current modeling only works with the specification of a specific single port. With the exception of accurate fault isolation, the entire Dial Backup management can be obtained by monitoring the remote router. This leads to the solution of simply modeling the remote side of the dialback in those cases where the host port/router is unspecified.

To recover the fault isolation accuracy, non-resolved connections between the dialup_Link model and each potential host router will be monitored. If the remote router is unreachable, and any one of the potential host routers is reachable, then a dialup_link alarm will be asserted. If no potential host router is reachable, then it is assumed that the dialup_link model is downstream of the point of failure.

c. New scenarios involve the backup of a group of ports on a router by a single dial backup port on the same router. That is, only when all interfaces in the backed up group are down will the backup be used. The Primary IFConfig will be updated.

--

The problem is Fault Isolation is not working properly. In a FDDI ring, devices connected to Unmanaged DAS models turn grey upon loss of contact. Also, SmartSwitch routers connected to a DAC device modeled as a non-manageable FDDI model will turn grey upon loss of contact. A user will never be notified with an alarm that the device has gone down. The DAS and DAC models remain blue because they are not managed (i.e. usually belonging to an ISP). The explanation to this problem is - When a device is connected to a DAS model and the device shows loss of contact (the DAS model is it's only neighbor), the fault cannot be isolated since the DAS model cannot be contacted via SNMP. Therefore, the model goes grey and not red. Even though the DAS model is "UP" and can be pinged, it is not "SNMP UP".

The resolution is SPECTRUM Fault Isolation will cause a device to completely ignore GenFDDIMac_NM and GenTRStn_NM models as it's neighbors. It will be as if they aren't even connected. This solution is exclusive to SPECTRUM 5.0rev1.

--

The problem was the customer was continuing to have problems viewing data and statistics after migrating their database from SPECTRUM 4.0rev3 to SPECTRUM 5.0rev1. Some of these problems were originally fixed with Spectrum_5.0rev1.P36. Apparently SPECTRUM was continuing to cut off the range if it rolled over a year. The dates of the loaded database prior to the migration were Wed May 27 00:00:00 1998 to Mon Apr 19 14:53:26 1999 and afterward the dates were: Thu Apr 1 18:36:56 1999 to Mon Apr 19 14:50:48 1999. The database was becoming truncated.

The resolution was to eliminate the truncation problem and improve performance.

--

The problem was when exporting data for a range of "DAY" some extraneous values outside of this range would appear in the export. If the range was changed to "CUSTOM" and specified 00:00 to 23:59, out of range data points will still appear.

The resolution was to correct the time lapse when exporting data.

--

The problem was when in a primary and secondary SpectroSERVER setup -- with Archive Manager running only on the primary -- an error message will appear after a small period of time (i.e. 15 minutes) in the ARCHMGR.OUT file. The error message is:

> "May 11 09:26:10 ERROR at CsStatMgr.cc(1393): Stat Log Manager Invalid stat time."

The resolution was to suppress the error message without changing any functionality. If the Archive Manager is started without a -debug flag then the error message will not appear in the ARCHMGR.OUT log. If the Archive Manager is run with the -debug flag from the command line then the error messages do appear in the ARCHMGR.OUT log.

--

The problem was Link Down events on GnSnmpDev models (event 10308) do not include varbind for ifindex. Therefore there is no link down alarm on the interface specified by the varbind.

The resolution was to add inferencing to alarm/disalarm ports upon receiving a LINK UP or LINK DOWN trap.

--

The problem was ISDN interfaces were receiving constant LinkDown alarms, despite Disable Trap Event being set to "TRUE" and Alarm on Link Down Trap being set to "NEVER" in the Model Information View of the interfaces.

The resolution was to change the inference handler for Device Link Down trap to see if traps have been disabled on the port which caused the link down trap before it asserts the yellow alarm onto the device model.

--

The problem was in the chassis view of a SS6000, the Enable and Disable menu options for the individual ports did not function while the Application Display is set to 802.1Q VLAN. Packet traces showed no SNMP sets being sent to the device. However, when the Application Display was changed to Physical the Enable and Disable menu options worked fine.

The resolution was to create configuration gib of CSIIfPort in the DVC. In this view, ifAdminStatus can be toggled via a pull down button. This mimics the function of Physical mode. The Configuration gib is launched regardless Application Display. The Enable and Disable menu options are removed.

--

The problem was that SPECTRUM AutoDiscovery of a SmartSwitch 9000 chassis containing 9A686_04 does not discovery correctly. The traditional way of modeling a 9A686_04 device cannot be used, because 9A686_04 and 9A656_04 have what is known as a distributed mode where the whole chassis shares one IP. The SFSmartCell is an application with the intelligence to govern the chassis model and 9A686_04 models when in distributed mode. When an SS9000 chassis determines it is in distributed mode it tries to read the 9A686_04's attribute CTM_Switch_MTH / 0xd80084. This attribute's default value should contain the model handle of the SFSmartCell and should launch the SFSmartCell Application to govern the chassis model and the 9A686 models, but because the value is not there the application never lauches.

The resolution was to make the appropriate database change so that the CTM_Switch_MTH / 0xd80084 attribute of the 9A686_04 model could be read by the SFSmartCell model.

--

The problem was the DevTop View was not launching off of the SFSmartCell model.

The resolution was to correct code so that the DevTop View successfully off of the SFSmartCell model wherever it is an option.

--

The problem was that a 6H252 with an HSIM-F6 installed did not create the FddiMAC model in the DevTop or Application view when modeled. AutoDiscovery did create a pipe to an FDDI container but placed it as a GenFDDIMac_NM that remained blue. The source of the problem was an attribute in the database that was used to point to a fddiCreator model type handled all the fddi creation issues (including fddiMACs). For many SS6000 devices, and a handful of SS9000 devices, this attribute was not correctly set, so the creation intelligence didn't know how to create the proper FDDI Applications.

The resolution was to change the attribute in the database to point the creation process to the correct OID string in order to create the fddiMAC application.

NOTE: Depending on what patches/maintenance versions of SPECTRUM are installed, a "Device Not Configured" message may appear when a user tries to drill into the DevTop of the fddiMAC application. This is a separate known issue with all major SmartSwitch devices (2000, 6000, 9000).

--

The problem was the value (Index List of 36 OIDs) of DisSysOIDList (Attribute 0x00011fae) seems to be erased. The reason was because DisSysOIDList 0x11fae attr does not have the Preserve Value Flag set. The problem appeared after a customer installed SPECTRUM 5.0r1/CS2/MMS2 CD & P54, SLAM-P54 Patches over an existing SPECTRUM area, but has existed since the DisSysOIDList was first introduced.

The resolution was to set the Preserve Value Flag for DisSysOIDList 0x11fae.

--

The problem was that LAN models were not getting created correctly (or at all in some cases) when modeled through AutoDiscovery. In one case, a customer used AutoDiscovery to model a SmartSwitch router 8000 as a seed router. The router had 45 ports, six of which had direct routes in the ipRouteTable. After the discovery, the only pipes to the router were from a fanout and a 9H421_12. Three LAN containers were created for one IP; two other LANs had a different IP, and a 6th LAN had its own IP. SPECTRUM was assuming that all interface models were one level below the router model, but the SmartSwitch Router uses the IF stack mib and therefore has several layers of both physical and logical interfaces.

In another case, the customer had several Cisco 2501's and 7500's modeled as Rtr_Cisco. These models were modeling either none or some of the containers which should show up on their interfaces. They were missing LANs from their ethernet interfaces and WA_Links from their PPTPS interfaces. No WA_Link models were being created for virtual interfaces and WA_Link models were not getting correctly placed on their interfaces in the DevTop view.

The resolution to the respective cases was to modify the get_interfaces() method so that it first tries the AD_GET_PORT_MH, then tries the GET_INTERFACES action, and then finally grabs the models in the HASPART relation. Also, code was changed to let get_spectrum_if() return the virtual IF model handle and IF index, instead of physical, if the virtual IF has already been modeled, which means if the user wants to see the virtual IF in the DevTop view, SPECTRUM should resolve/model the subnets for these virtual IFs.

--

The problem was that SPECTRUM was not resolving connections between switches and routers so that a switch could communicate with a router via any of its ethernet interfaces.

For example, a customer models a router and three switches -- A, B, and C. The router has three ethernet interfaces -- X, Y, and Z. The dot1dTpFdbAddress table on switch A knows about ethernet interface X. The dot1dTpFdbAddress table on switch B knows about ethernet interface Y. Likewise, C knows about Z. If the customer draws a pipe from the router to switch A, the router resolves to the correct interface. If he draws a pipe from the router to switch B or C, he gets

an off-page reference icon of the router in the switch's devtop. Each time the customer drew a pipe, he did a tcpdump between the VNM and the switch to which he is drawing a pipe. Each of the tcpdumps shows that the VNM only queries the dot1dTpFdbTable for MAC address X, and ignores Y and Z.

The resolution was to change code so that now SPECTRUM will search all interface MAC addresses if it cannot find a match using the value found in the router model's MAC_Address attribute. Device Discovery is now able to discern on which port the router and switch have a true connection.

--

The problem was that during AutoDiscovery of the AS5x00 model Dialup_Link models were automatically created and placed on each of the PPP ports. The Dialup_Link models are for managing dial-up lines used to backup a primary interface and the Cisco Access Server is a dial-in server. Although the ports can be configured to be backup, their primary use is for users to remotely connect to the network. Each time a dial-up user connected or disconnected from the modem a brown alarm would get generated. In some cases, the amounts of this type of alarm would cause the AlarmView to hang.

The resolution was to eliminate the automatic creation of Dialup Links when an ASx500 is modeled by AutoDiscovery or by IP.

--

The problem was the Configuration View and the IF Config Table of a Rtr_Cisco 7000 did not properly display the column for Local Description or any information pertaining to that attribute. The header would come up briefly but went away once the other table information was loaded. This was due to the fact that the device was not returning values for all instances for certain attributes.

The resolution was to remove the attributes from the Configuration View. The Local Description attribute, as well as: Change Reason, Queue Length, and Packet Size, now all exist in the Interface Configuration Information Table. This table can be accessed by double clicking a value in the Interface Configuration Table which is part of the Configuration View.

--

The problem is with the DLCI_port model type. In SPECTRUM, the port would toggle between GREEN and RED (up and down) after a DLCI connection was made then broken on a router supporting DLCI. There is an attribute called "dlcistate" which is one of 11 internal/ external attributes for the DLCI_port model type. In one particular case, when the connection between two DLCI ports broken, nine out of the 11 external reads fail on the near end router -- dlciState is one of them. These failed attributes get put into an unsupported external attributes list for that model, and write 0 values to the corresponding internal attributes. Then these failed external attributes are NEVER read again. That's why after the disconnection, the internal attribute dlciState was not consistent with the external attributes. However due to another code error, if the read of dlciState was within 10 seconds from a previous read, the old value of 2 was returned. That's why the dlciState toggling between 0 and 2 (up and down).

The resolution is to use the first three external reads after a disconnection to build the unsupported external attributes list. An attribute will be added to the list only if it has failed on for all three reads. This will prevent attributes from being added to this list prematurely and NEVER read again.

--

The problem is when opening the application view of the HubCat5500 the view takes between 60 and 90 seconds to fill in the icons. While this is occurring there is an hour glass that does not allow the user to do anything else with the graph.

The resolution is to disable all refreshes until all the models are fully realized. Then the entire window refreshes at once.

--

The problem was the ability to view the ifAlias value for each interface was needed for Gen_IF_Port and Serial_IF_Port models. This information was needed to find where a particular device was on the network at a faster rate than it could be found before.

The resolution was to create a new model type called "RFC2233MIB" and three new attributes for it called, "ifAlias", "ifStackLastChange", and "ifTableLastChange". RFC2233MIB was derived from the IETF model type. The "ifAlias" attribute was also added to the "data_relay_prt" model type so that the interface models get the new attribute.

--

The problem was that while running a "Reconfigure Model" on an rtr_cisco (Cisco 2501) it was found that the SPECTRUM AutoDiscovery would dead-lock at a router model which originally had a data relay class of 0. When the data relay class was changed from 0 to 3 the AutoDiscovery would still dead-lock. Presently, only one scratchpad is shared by all router actions. This circumstance may have caused a SpectroSERVER core dump while one router action was reading the scratchpad, and another action was trying to delete/add to the scratchpad.

The resolution was to add a new variable in the router's scratchpad. So far, the deadlock only occurred between two actions AD_ROUTER_MAP and AD_GET_RTR_INTERFACE_ID. During a router map discovery, AD_GET_RTR_INTERFACE_ID action was indirectly triggered, which resulted in deadlock. The new solution to this problem is to set the newly added variable ad_router_map_lock in the scratchpad to TRUE before running AD_ROUTER_MAP. Then if AD_GET_RTR_INTERFACE_ID action is triggered, SPECTRUM needs to check if ad_router_map_lock was set to TRUE. If yes, SPECTRUM doesn't lock the discovery process for this action. Also, a new method get_complete_scratchpad() was added to CsIHRouterDisc to access the new scratchpad member ad_router_map_lock.

--

The problem was SPECTRUM was showing a significant (1.6G in a 30 hour period). Purify had been installed and a trace was made available. The DDM database was re-initialized and the polling and logging data was verified. SPECTRUM still showed a memory growth after these measures were taken.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was if a long expression was typed in by hand when creating a SpectroWatch it would become truncated upon shutdown and restart of the WatchEditor. This occurred because the WatchEditor added extra spaces and parentheses to the expression when it saved and reloaded it. The WatchEditor would allow saving the long expression with no incident. It was only when the

WatchEditor was shut down then restarted that the truncating problem occurred.

The resolution was to increase the formula size limit to 2K for the saved format of the expression. This allows for larger expressions to be saved without incident. If an expression still exceed the formula limit in its saved format (vs. original format) then a error dialog box will appear suggesting that the watch be broken up into two or more smaller watches.

--

The problem was SpectroSERVER and WatchEditor were crashing when editing a watch. If a SpectroWatch was successfully created and then modified with an incorrect attribute (i.e. one that is not associated with the device) - the SpectroSERVER and WatchEditor core dumped when an attempt was made to save the watch.

The resolution was to add a null pointer check to the call associated with the attribute save. This prevents the core dump of the SpectroSERVER and WatchEditor when an incorrect attribute is saved to a previously existing watch.

--

The problem was that the SpectroSERVER was crashing every three to four days with the following error: "? mts.malloc: out of memory (32768 bytes requested)" The SpectroSERVER had been up and running without terminating for about six months until applying several patches at the same time (these were: P24, P26, P27, P29, P30, P33, P37, P41). The SpectroSERVER ran for three to four days and then terminated with the mts.malloc error. No core file was generated. The performance on the SpectroSERVER was good with no latencies at all.

The resolution was to identify the memory leaks in the code with purify and then to fix them.

--

The problem was SPECTRUM was returning a YELLOW alarm for a Synoptics 5000 Hub with every DCE installed, but only one that was configured. This alarm was not clearable. The customer felt that this alarm was extraneous since the device was purposefully configured that way. The only way to clear the alarm was through CLI.

The resolution was to make the alarm clearable through SPECTRUM AlarmNotifier. The alarm will generated when the device is modeled and upon device reconfiguration.

--

The problem was a memory leak was found due to the creation of a HubSyn5xxx. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The SpectroSERVER core dumps on a regular bases after installing theor the 3Com 3300 devices.

When the interfaces are checked, we read three attributes, two are internal but one is external. If there is a problem with the external read it is possible that the CsBuffer being returned is NULL, therefore any attempt to use it will create a core dump.

--

The problem is that SpectroSERVER core dumps during device AutoDiscovery or mapping of LightStream1010 ATM devices. Model type: LS_1010 firmware: 11.2(8)wa3(3).

The resolution to this problem was to find and then correct a stack error in the LightStream Management Module code. Also, a memory leak was found and resolved.

--

The problem was that SpectroSERVER core dumps during device AutoDiscovery of ATM switch models associated with the Zeitnet Management module.

The resolution to this problem was to find and then correct the code in the get_cpu_instance function in the Zeitnet Management Module.

--

The problem was a sw_link that was attached to a Zeitnet switch was showing a value of "FAILURE" in it's Performance View statistic fields.

The resolution was to add the ability to use a Gen_IF_port as a monitor point for the sw_link. This will allow Performance View statistics to appear.

--

The problem was when a model was created of type Gen9000 or Gen6000, the ports in the Device->Chassis view were displayed with an icon similar to what would normally be seen in the DevTop view, instead of the way ports were normally displayed in the chassis view.

The resolution was to create a new interface icon for use in the Chassis view.

--

The problem was a memory leak was reported in CsIHSecondaryAddress::add_to_list() and CsIHRouterMap::FR_discover. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was the connection between the Frame Relay subinterface and ATM subinterface was not resolved.

Some background information that will make the resolution more understandable is as follows:

In 5.0rev1, we use FR DTE to resolve the conductivity of FR interfaces down to the DLCI ports. During AD_ROUTE_TABLE_DISCOVERY action, A router's IP routing table was read and saved to the scratchpad for each interface appearing the IP routing table. The scratchpad is indexed by interfaces index. But if a router has a FR sub-interface configured and the FR sub-interface appears in the IP routing table, we don't create a scratchpad for that FR sub-interface. Instead, we create a scratchpad on the physical FR interface and save all the FR sub-interface's information, such as ipRouteDest, ipRouteNextHop and etc, into FR physical interface's scratchpad. By doing this, we can pass all the routing info to FR DTE, which is connected to the FR physical interface, and let DTE to resolve the conductivities.

During router mapping process (AD_ROUTER_MAP action), we read each entry from the router's scratchpad and map the interface in the scratchpad entry. Since FR sub-interfaces were not scratched by their own IF index(all info was scratched under the FR physical IF), we don't actually resolve each individual FR sub-interface. When mapping the FR physical interface, we are actually dealing with the map of this side DTE to the other side DTE. However, if a FR sub-interface is "directly" connected to another non-FR interface, the routing info of the non-FR interface will not be saved into the other side DTE. So this connection couldn't be resolved during the FR DTE mapping.

The resolution was to create a scratchpad for each FR sub-interface which appears in the IP routing table and save the FR sub-interface's routing info into the both FR physical and sub interface scratchpads. So the FR DTE's can still be mapped, and the FR sub-interface scratchpad can also be used to resolve the conductivities if the other side is not a FR sub-interface.

Cases to be considered:

(1) One side is a FR sub-interface; other side is not and has not been modeled yet.

Skip resolving the FR sub-interface. Only do the normal FR DTE map on the FR physical interface. We may also place a LAN/WA_Link off the FR sub-interface. Also, if one side is a FR subinterface and other side has not been modeled yet, don't place LAN model off the FR subinterface

(2) One side is a FR sub-interface; other side is not and has already been modeled.

We will treat the FR sub-interface as ordinary IF and use the scratchpad to resolve the connection. We'll also do the normal FR DTE mapping on the FR physical interface. The FR sub-IF's routing info saved in the physical IF sratchpad will not be reused for the DTE mapping.

(3) One side is not a FR sub-interface; other side is FR sub-interface but not modeled.

The get_interface_network_mtype() will return LAN mtype for FR subinterface. But the FR subinterface won't be resolved until other side was modeled and is a non-FR subinterface.

(4) One side is not a FR sub-interface; but other side is FR sub-interface and has already been modeled.

Using other side FR sub-IF scratchpad to do the normal mapping.

--

The problem was a sw_link that was attached to a Zeitnet switch was showing a value of "FAILURE" in it's Performance View statistic fields.

The resolution was to add the ability to use a Gen_IF_port as a monitor point for the sw_link. This will allow Performance View statistics to appear.

--

The problem was when a model was created of type Gen9000 or Gen6000, the ports in the Device->Chassis view were displayed with an icon similar to what would normally be seen in the DevTop view, instead of the way ports were normally displayed in the chassis view.

The resolution was to create a new interface icon for use in the Chassis view.

--

The problem was a memory leak was reported in CsIHSecondaryAddress::add_to_list(), CsIHRouterMap::FR_discover, and CsIH450Bd::create_vlan_ports(). Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was that there were multiple small memory leaks as a result of modeling BayStack Management Modules. Purify had been installed and a trace was made available.

The resolution was to remove the memory leaks from the code pinpointed by the Purify traces.

--

The problem was that the SpectroSERVER was crashing with an `mts malloc out of memory` error when the Asnd_MAX model was in the database. When this model was not present, the SERVER would not crash. The crash was caused by the negative value being returned by the device for mdmNumber.

The resolution was to add a check to make sure the value returned for mdmNumber was not negative. The SpectroSERVER should no longer crash when the Asnd_MAXmodel is in the database.

--

The problem was that no pipe was being created between the two ATM interfaces in the following scenario:

> A WA_Link model was placed off at AAL5 (ATM Adoption Layer) interface on non-core router, and a LAN model placed off at ATM subinterface on core router. The two interfaces (AAL5 and ATM subIF) were directly connected together. But no pipe was created between the two interfaces.

The resolution was to change the way SPECTRUM resolves these connections so that the pipe will be created.

--

The problem was that AutoDiscovery code placed a LAN model off an interface that had a direct route. If a LAN was subneted by mask 255.255.255.252, only two IPs would be allowed for the subnet. These two IPs would be used for the two interfaces from each side router. For this case, no third device was allowed to connect/be within this subnet LAN.

The resolution was to change AutoDiscovery so that the other router would be placed off of the interface rather than the LAN model.

--

The problem was that several variables for determining whether a model type was a valid subnet type were not initialized.This was causing AutoDiscovery to work incorrectly.

The resolution was to initialize the variables and remove others that were hindering AutoDiscovery.

--

The problem was certain error messages (ie. failure to read attribute: 0x1161009) were being displayed in the VNM.OUT that should have been hidden from the user.

The resolution was to suppress the error message.

Chapter 6

Files Shipped With CS3

This chapter lists the SPECTRUM files that are shipped with the CS3 software.

The CS3 software includes the following deliverable files listed by product name.

CORE

- SS/SS.o
- SS/core.e
- SS/.vnmrc
- SS/libEPI.a
- SS/libIHapi.a
- SS/libVPapi.a
- SS/libGlobl.a
- SG/CsGoSPMA.o
- SG/CsUserDefAct.o

Ibm6611

- SG-Support/CsGib/AppnSessApp/SessGenTab.GTS

SG-Core

- SG/SG.o

SG/libUIapi.a

SG/libVPapi.a

SG/libGlobl.a

SG/libPort.a

SG-Tools/stdmenu/salt_stdmenu

SG-Tools/SALT

ndlib/salt.dat

SG-Tools/appdef/spectrum

SG-Tools/appdef/spectrum.ENG

SG-Support

SG-Support/CsGib/LostFound/CsStandard.30

SG-Support/CsGib/FaultIsolation/CsPerform.30

SG-Support/CsGib/LivePipes/CsPerform.30

SG-Support/CsGib/LivePipes/CsStandard.30

SG-Support/CsEvFormat/Event00010017

SG-Support/CsEvFormat/Event0001030a

SG-Support/CsEvFormat/Event0001060d

SG-Support/CsEvFormat/Event00010701

SG-Support/CsEvFormat/Event00010702

SG-Support/CsEvFormat/Event00010706

SG-Support/CsEvFormat/Event00010d17

SG-Support/CsEvFormat/Event00010d18

SG-Support/CsEvFormat/Event00010d19

SG-Support/CsPCause/Prob00010003

SG-Support/CsPCause/Prob00010410

SG-Support/CsPCause/Prob00010411

MF

SS/a1count.o

SS/a1guage.o

SS/a1uint.o

SS-Tools/dbpart1/a1count.o

SS-Tools/dbpart1/a1guage.o

SS-Tools/dbpart1/a1uint.o

SM-COMMAN

SG/CsSbMnuIcon.o

SG/CsDevIcon.o

SG/CsDISwGag.o

SG/CsDISPARel.o

SG/CsDIPtFmSta.o

SG/CsGoInsNW.o

SG/CsRdAttInNW.o

SG/CsZAppView.o

SG-Support/Enumerations/iftype.txt

SS/CsIHSyncRd.o

SS/CsSbMnuIcon.o

SS/V3COREMM-CSI.e

SS/V3COREIM-CSI.e

SS/CsColFddiMI.o

SS/CsIHUPSInit.o

SS/CsIHIfStat.o

SS/CsIHColFddi.o

SS/CsPAppLst.o

SS/CsIHSyncRd.o

SS-Tools/dbpart1/V3COREIM-CSI.v

SM-CSI1017

SG-Support/CsGib/GnSNMPDev/CsFIConfig.30

SG-Support/CsGib/GnSNMPDev/CsRdndOpt.30

SG-Support/CsIib/GnSNMPDev/Large.Bas

SG-Support/CsIib/GnSNMPDev/Small.Bas

SG/CsDynImage.o

SG-Support/CsEvFormat/Event003d0001

SS/CsGnSNMP2MI.o

SS/CsVendor/Ctron_SNMP/GnSNMPDev/AlertMap

SS/CsVendor/Ctron_SNMP/EventDisp

SS/CsIHChasCtl.o

SS/CsIHChasMgr.o

SS/CsIHChasSup.o

SS/CsPortGroup.o

SS/CsIHRlayFnc.o

SM-DBCONV

SS-Tools/DBconv

SM-GEXT

SG-Support/CsIib/Ds3App1407/Ds3App.AIBase

SG-Support/CsGib/Ds3App1407/CsDs3CfgGTb.30

SG-Support/CsGib/Ds3App1407/CsDs3Config.30

SG-Support/CsGib/Ds3App1407/CsDs3Confg.GTb

SG-Support/CsGib/Ds3App1407/CsDs3Curr.30

SG-Support/CsGib/Ds3App1407/CsDs3Curr.GTb

SG-Support/CsGib/Ds3App1407/CsDs3Intv.30

SG-Support/CsGib/Ds3App1407/CsDs3Intv.GTb

SG-Support/CsGib/Ds3App1407/CsDs3Totl.30

SG-Support/CsGib/Ds3App1407/CsDs3Totl.GTb

SG-Support/CsGib/Ds3App1407/CsStandard.30

SG-Tools/pib/SM-GEXT.p

SG-Support/CsGib/CmUPSApp/CsPerform.30

SG-Support/CsGib/CtUPSApp/CsPerform.30

SS/SM-GEXT.e

SS/CsEGP1AppMI.o

SS/CsEGP2AppMI.o

SS/CsICsMPAppMI.o

SS/CsIP1AppMI.o

SS/CsSNMP1AgMI.o

SS/CsSNMP2AgMI.o

SS/CsTCP1AppMI.o

SS/CsTCP2AppMI.o

SS/CsUDP1AppMI.o

SS/CsUDP2AppMI.o

SS/Cs1512MI.o

SS/CsMdmCallSt.o

SS/CsTRAppMI.o

SS/CsEthAppMI.o

SS/CsEtIfAppMI.o

SS/CsTRIfAppMI.o

SS/CsDTRAppMI.o

SS/CsDTRIfApMI.o

SM-GMMADISC

SS/GmIHRpSrAdr.o

SS/GmIHdot1Bdg.o

SM-GNBDG

SS/CsGBdgAppMI.o

SS/CsStaAppMI.o

SS/CsIHSpanCtl.o

SS/CsIHPtStAct.o

SG-Support/CsGib/GenBridgePort/CsStandard.30

SG-Support/CsGib/GenBridgePort/CsTrapConf.30

SM-GNRTR1

SG-Support/CsGib/FrameRelayPort/CsStandard.30

SG-Support/CsGib/FrameRelayPort/CsTrapConf.30

SG-Support/CsGib/Gen_IF_Port/CsStandard.30

SG-Support/CsGib/Gen_IF_Port/CsTrapConf.30

SG-Support/CsGib/Serial_IF_Port/CsStandard.30

SG-Support/CsGib/Serial_IF_Port/CsTrapConf.30

SG-Support/CsPCause/Prob00220006

SG-Support/CsIib/Gen_IF_Port/ChsPrt.IFCE

SG-Support/CsIib/Gen_IF_Port/IFacePrt.IFCE

SG-Support/CsIib/Gen_IF_Port/IFaceTwo.IFCE

SG-Tools/pib/SM-GNRTR1.p

SG-Tools/iconmap/gnrtr1.icon

SG-Tools/tplinc/gnrtr.tpl

SS/SMGRTR-CSI.e

SS/CsIHDLnkTrp.o

SS/CsIHRtrSum.o

SS/CsIHIpRoute.o

SS/CsGSnmpRMI.o

SS/CsIHSnmpRRoll.o

SS/CsATAppMI.o

SS/CsGenIFMI.o

SS/CsIPAppMI.o

SS/CsRtrAppMI.o

SM-GNSW

SG/CsGoGnInDMH.o

SS/CsIHWSSet.o

SS/CsIHSwLkMP.o

SS/CsIHSwMPAp.o

SS/CsIHPStAct.o

SS/CsIHGIfDesc.o

SS/CsIHSwPtEv.o

SS/CsIHSwRdIn.o

SS/CsGnSwPrtMI.o

SS/CsSWLinkMI.o

SS/CsSwPrtTyMI.o

SNSMP-CSI

SS/CsIHSnmpPIf.o

SS/SMSNP-CSI.e

SS/CsDcmBlkLst.o

SS/CsSnmpIf.o

SS/CsSV1Ident.o

SS/CsSV1PIfUniq.o

SS/CsSnmpV1PIf.o

SS-Tools/dbpart1/SMSNP-CSI.v

actn

SG/CsGoSPMA.o

SG/CsUserDefAct.o

adisc

SS/CsIHIfTypeL.o

SS/CsIHBkgrdDis.o

SS/CsIHSNMPRtr.o

SS/CsIHTblDisc.o

SS/CsIHRtrMap.o

SS/CsIHRtrDisc.o

SS/CsIHVerByIP.o

SS/CsIHDevDis.o

SS/CsTVIBMI.o

SS/ADIfType.o

adisc_opt

SG-Tools/RTRDISC

SG-Tools/ARTDISC

SG-Tools/BRGMAP

SG-Tools/HUBMAP

SG-Tools/autodisc

alarm

SG-Support/CsExtProcess/AlarmView

SG-Support/CsResource/language/alarm.default

SG-Support/CsHelp/AlarmView/default/findinfo/info.htm

SG-Support/CsHelp/AlarmView/default/images/infopanl.gif

SG-Support/CsHelp/AlarmView/default/images/prefer3.gif

SG-Support/CsHelp/AlarmView/default/settings/pref.htm

cview

SG-Support/CsScript/ClientView

event

SG-Support/CsExtProcess/EventLog

findv

SG/CsFCCreate.o

SG/CsFCView.o

SG/CsFInit.o

SG/CsFView.o

genv

SG/CsAppBtn.o

SG/CsIGModel.o

SG/CsIGSecTxt.o

SG/CsMltGphAbs.o

SG/CsIGMngNbor.o

icon

SG/CsIAniMult.o

SG/CsIAck.o

SG/CsIDiag.o

listv

SG/CsLVView.o

malt

SG-Tools/MALT

SG-Tools/SSMALT

mapv

SG/CsTAddIP.o

SG/CsTNormal.o

SG/CsPLLServer.o

SG/CsTView.o

net_dev

SG-Support/CsGib/WA_Link/CsStandard.30

npc

SS/CsDialupLinkMI.o

SS/CsIHDialCond.o

SS/CsDBLData.o

SS/CsIHDialTrap.o

SS/CsIHDialConn.o

SS/CsIHDlUnreach.o

SG-Support/CsExtProcess/PrimIFConfig

ssroe_core

SG-Tools/reconfig

SG-Tools/hierarchy

SG-Tools/reconfig.txt

SG-Tools/hierarchy.txt

SG-Support/CsResource/language/ssroe.default

sstls

SS-Tools/SSdbdelete

steae

SG-Support/CsExtProcess/ECEditor

SG-Support/CsResource/language/steae.default

uiapi

SG/libUIapi.a

SG-Support/CsScript/CsPrint

SG-Support/CsScript/CsXwdPrint

SG-Support/CsScript/CsXwdToPcl

SG-Support/CsScript/CsXwdToPs

SG-Support/CsScript/CsXwdToXwd

usred

SG-Support/CsScript/UserEditor

vnm

SS/vnm.e

watch-ih

SS/SwReader.o

SS/SwLoopDetct.o

SS/SwIHControl.o

SS/SwIHEval.o

SS/SwIHEval2.o

SS/SwIHAlarmEd.o

SS/SwCallComp.o

SS/SwDescBase.o

SS/SwError.o

SS/SwGenPurp.o

SS/SwInstInfo.o

SS/SwInstInfoL.o

SS/SwIntDesc.o

SS/SwIntThold.o

SS/SwMdlOvride.o

SS/SwPCause.o

SS/SwTholdBase.o

SS/SwThreshld.o

SS/SwUIDesc.o

SS/SwUIThold.o

SS/SwValList.o

SS/SwWInfRepN.o

SS/SwWatchInf.o

SS/SwString.o

SS/CsInterp.o

SS/CsIobject.o

SS/CsIobjectL.o

SS/CsIops.o

SS/CsIstack.o

SS/CsStrstack.o

SS/CsIvnmops.o

SS/SwLex.o

SS/SwYacc.o

watch

SG-Tools/WatchManager

SG-Tools/WatchEditor

SG-Support/CsResource/language/watch.default

SMEPI-CSI

SS/SMEPI-CSI.e

SS/CsIHEpiPIf.o

datex

SG-Tools/SDE

SG-Tools/dataexp

SG-Tools/SDEIngImport

SG-Tools/SDESybImport

SG-Tools/SDEOraImport

SG-Tools/dtxscript.tpl

ddm

SS/DDM/ddm_load

SS/DDM/ddm_save

SS/DDM/ddm_AttrDict

SS/DDM/ArchMgr

ecmsprm

SS-Tools/dbpart1/CsvScmAtrVL.o

ecm/Ecm

ecm/CISCO_MTYPES

ecm/bckgrnd/ecmbg

ecm/bckgrnd/ecmbgscript

ecm/bckgrnd/export

ecm/bckgrnd/import

SG-Support/CsEvFormat/Event00820012

SG-Tools/appdef/Ecm

rprts

SG/Graphrpt

SG/Alarms

SG/BGArcRpt

SG/EventAR

SG/Inventory

SG/UpDownAR

SG/ReportsUI

SG/lprps

SG/RepGRFtogif

SG/rptscript

SG-Tools/RibE

report.config/default.PRF

sanm

SANM/PolicyAdmin

SANM/associate

SANM/xcron

sanmtk

.SANMTK/lib/libGlobl.a

.SANMTK/lib/libPort.a

.SANMTK/lib/sanmtk.a

spars

ars_gateway/SpectrumSchema

ars_gateway/Schema.adv

ars_gateway/showTT.arq

ars_gateway/submitTT.arq

ars_gateway/reconfig

SG-Support/CsScript/ShowTroubleTickets

SG-Support/CsScript/SubmitTroubleTicket

ars_gateway/arsgated

Notifier

Notifier/AlarmNotifier

Notifier/AlarmAck

Notifier/AlarmClear

SA-CSI1011

SG-Support/CsExtProcess/AlarmViewSL

SG-Support/CsResource/alarm.default

SG-Support/CsHelp/AlarmViewSL/default/findinfo/info.htm

SG-Support/CsHelp/AlarmViewSL/default/images/infopanl.gif

SG-Support/CsHelp/AlarmViewSL/default/images/prefer3.gif

SG-Support/CsHelp/AlarmViewSL/default/settings/pref.htm

SA-CSI1012

SG-Support/CsExtProcess/AlarmView

SG-Support/CsHelp/AlarmView/default/findinfo/info.htm

SG-Support/CsHelp/AlarmView/default/images/infopanl.gif

SG-Support/CsHelp/AlarmView/default/images/prefer3.gif

SG-Support/CsHelp/AlarmView/default/settings/pref.htm

SA-CSI1018

WEB/AlarmWeb/AlarmWeb

SG-Support/CsResource/language/wav.default

PortLib

SDK/lib/libPort.a

epapi

SDK/lib/libEPapi.a

globl

SDK/lib/libGlobl.a

ihapi

SDK/include/IHAPI/CsIHThrshld.h

SDK/lib/libIHapi.a

insdk

INSDK/buildfiles/Install.tar

INSDK/mkarea

vpapi

SDK/include/VPAPI/CsActionCode.h

SDK/include/VPAPI/CsAlarmCause.h

SDK/include/VPAPI/CsAttrValDef.h

SDK/include/VPAPI/CsEventTypes.h

SDK/include/VPAPI/CsRelDef.h

SDK/include/VPAPI/CsRHLst.h

SDK/lib/libVPapi.a

cmdproc

vnmsh/VnmShd

vnmsh/.vnmshrc

vnmsh/connect

vnmsh/create

vnmsh/destroy